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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

SEPTEMBER, 1921

No. 9

SHOULD THE PATIENT HAVE THE RIGHT OF CHOICE OF PHYSICIAN?

One would be indeed both wise and bold who would offer a complete program of treatment for the "industrial medicine" problem of today, or for that matter who would hazard a prognosis for its future. All persons will admit the controversial nature of the subject and all will also admit that the present policies, methods and procedure are far from what they should be when considered from the standpoint of the public, the patient, the physician, employer or the carrier.

This being a fact, we must of course, expect numerous and frequent changes in methods, with new ones developing from time to time. During this transitional period and until a satisfactory solution of the problem is found, the opinion of any student of the subject upon any phase of the problem is entitled to our consideration. Doctor Myers' article, published in this number of the JOURNAL, will be endorsed in whole or in part by some, and others will as frankly dissent. All will be interested.

The editor desires to invite careful attention to just one point mentioned by Dr. Myers and which runs like a thread through all discussions and legal decisions bearing upon the subject: *It is the right of any sick person to the services of the physician of his choice.* Violation of this prerogative strikes pretty close at the very foundation of our democracy. The Constitution of our country devotes space to the protection of the rights of individuals, and it is at least a question whether a test case would not result in the upholding of the right of choice of physician by any sick person as an inherent right. Certainly such a conclusion is socially and economically sound; has been all but universally recognized

always everywhere except in prisons and in the military.

Violations of this principle always have caused trouble, and there is no record of the permanent success of any organization or law founded upon such a fallacy. The laws of California and of other States and of all countries where social and State medicine are in force, violate this principle both in policy and in practice. It is the principal rock upon which many have been wrecked and which experienced navigators in the waters of compromise are now busy trying to avoid.

Most insurance carriers have violation of this principle as one of their rules and it causes them more trouble than all other problems connected with their work. The alleged reason why insurance carriers take the choice of physician from the patient into their own hands is a financial one. They have learned from experience that they can select physicians who will accomplish more in time saved to injured workmen than will be saved if the workman is allowed to choose his own physician. This, of course, is a fact; but even so, has the insurance carrier, or the law for that matter, the right to invade the grounds of personal liberty to such an extent?

Would we or would we not be better off and all of us be happier if we actually, in law and in practice, allowed every sick person the absolute right of choice of medical attendant from among those qualified by education and experience, in spite of the fact that such privilege would increase the hazards of illness, the cost of medicine and in the case of insurance companies the premium rate?

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

MEDICAL EDUCATION

Physicians interested in medical education should read the various comments made upon this subject at the annual meeting of the American Medical Association in Boston, particularly the remarks made by Dr. Bevan, chairman of the Council on Medical Education, and the presidential address of Dr. Work. Dr. Bevan stated in part as follows:

"I desire to refer to a disturbing influence which has been introduced into medical education in the last few years, and which has become in a way a menace to our progress along sound lines. I refer to the introduction of a scheme of organization of the faculties of our medical colleges, which has been introduced by the great educational foundations, and by some of the State universities. I shall refer especially to the plan of all-time clinical instruction. This plan did not originate in the medical profession. It originated outside the medical profession and, unfortunately, it has been forced upon the situation largely by money. It is a subsidized plan which has been presented to universities with the statement that they would be given one or two millions of dollars or more, provided they would adopt the all-time clinical plan in their scheme of organization. . . .

"This plan has not been a success. I do not hesitate to say that it has been a failure. It has not the support of the medical profession. I fail to find that it has anywhere the support of the great teachers of medicine, or the great teachers of surgery, or the great teachers of the medical and surgical specialties. The plan has been backed largely by men who are not medical men, and by men who, if they are medical men, are connected with laboratories. It is a very expensive plan. Its cost is out of all proportion to the results that are obtained in medical education.

" . . . We should make it very clear to the outside agencies who are urging and subsidizing their special plans that the organized medical profession cannot adopt any plan of medical education that is not in keeping with the honor and dignity and best interest of the medical profession.

"One weakness of the all-time clinical plan is the grotesque proposition that the all-time clinician in one of these schools is to accept fees from well-to-do patients and the rich, but that these fees are not to go to the individual who renders the service, but to the institution. . . .

"This plan (it) has been applied in a hybrid form recently in the University of Michigan with disastrous effects. The University of Michigan is planning to enter the field of medical practice. It contemplates building a hospital of six hundred to twelve hundred beds, and putting salaried men at the heads of the clinical departments in the institution. These salaried men are to take care not only of the poor, but also of the well-to-do and rich. In other words, they are distinctly entering into competition with the medical men of the State. . . .

"In the development of the medical education of the future, the great medical profession will be

little influenced by subsidized plans urged by endowed propaganda from outside agencies, but will be controlled by the experience and advice of the great laboratory workers, the great clinicians, the great teachers who are on the firing line of medical progress and are in touch with the needs of medical education and medical practice."

Following along the same line as Dr. Bevan's remarks were those of Dr. Work in his annual address. He states:

"That governments, through their teaching universities, may not justly, for a fee, attract patients for medical treatment. It is the function of a teaching college to train physicians, and scatter them for public use, and to instruct, develop and protect them as alumni in their several places.

"It cannot draw the sick to a common center for pay, in order to augment the salaries of its teachers, without breeding distrust, relieving citizens of their proper sense of responsibility to their neighbors, and incurring the just antagonism of its alumni."

The medical profession of California can again congratulate itself that it had the wisdom to establish the League for the Conservation of Public Health, which has so successfully opposed the introduction of State medicine into California in any disguise or form. That the profession in this State has escaped the "disastrous effects" noted by Dr. Bevan in Michigan is due to the well-directed campaign of the League, which has secured the closest co-operation and effective action of a united medical profession which stands together upon a public welfare platform, devoted to the scientific practice and progress of modern medicine.

The dangerous developments in Michigan and other States referred to by Drs. Bevan and Work are being carefully observed here and any attempt to adopt plans that are producing "disastrous effects" elsewhere will meet with invincible opposition.

ORAL RADIOLOGY

"It is probable no other particular branch of radiology warrants more earnest consideration and conscientious study, at this juncture in the development of the science, than oral radiology.

"Two things appear with alarming clarity: One, that medical radiologists know comparatively little about the pathology of the mouth; and two, mighty few dentists know enough about the technique of radiology to function properly.

"Two matters of vital importance must be worked out if the radiologists on the medical side are to fulfill their functions, and if the dentists on their side are to advance in the practice of their science commensurately with public demand. Those two things are: One, uniformity of nomenclature; and two, standardized technique, based on a thorough understanding of mouth pathology. At present, there is such a multiplicity of terms describing identical oral conditions, and such a paucity of knowledge concerning the technique of oral radiology, that both dentist and medical diagnostician experience keen disappointment in the results obtained."—Abstract of editorial from the Journal of Radiology, Volume II, No. 7.

THE INFLUENCE OF CLIMATE ON TUBERCULOSIS

"A special or truly immune climate does not exist. The value of climate depends upon how perfectly it can aid in the production of improved nutrition, and the restriction of all functions to a normal physiological standard working into the body and mind to accomplish this. Tuberculosis can be cured in every climate where extremes do not exist. The individual condition of the patient alone allows the choice. To accomplish a cure, the plan of treatment and the method of life the patient follows holds the first consideration."—Abstracted from the recent book on Pulmonary Tuberculosis by Dr. L. J. Otis.

THE RELATIONSHIP BETWEEN THE STATE AND THE PHYSICIAN IN ENGLAND

At the recent meeting of the British Medical Association, nationalization of the profession was condemned by all as an impracticable procedure. The work of the physician is essentially individualistic, and the relationship between patient and practitioner should be between patient and practitioner, and cannot be abolished by State intervention. That changes are required and that a closer relationship between the State and the profession is necessary must be admitted. This relationship is in the process of evolution. Such enactments as the Insurance Act, Workmen's Compensation Act, and Midwives' Act have thrust new obligations on physicians, and for such services they are compensated by the State. A plea was made for better understanding between the State and the medical profession on questions relating to curative and preventive medicine. A complete reorganization of the public health bodies is required to prevent overlapping and duplication of work. At present five local authorities are concerned with maternity and infancy; three with school children; six with mental deficiency. With such a system, or lack of system, the work must be expensive and ineffective. A single authority with subdivisions is clearly a first essential in any measure of reform, and this requires the earnest co-operation of the State, the public and the profession. New conditions require that medical schools and post-graduate courses must be prepared to furnish improved training in preventive medicine and in the political science of commercial responsibility. With well-educated general practitioners the future is secure, and to them must be assigned the education of the public in measures necessary to preserve health, as well as dealing with the care of the sick. At the present time only the very rich and the very poor can obtain the advantages of a full clinical and laboratory examination in case of sickness. Even when complete diagnostic procedures have been carried out, a suitable treatment is often impossible at home, and also in nursing homes, which are frequently merely expensive boarding houses.

A preliminary report has been made, showing definite opposition to nationalization of the profession and opposition to converting medicine into a State service. However, it is proposed to establish primary and secondary health centers through-

out the country. The primary health centers are virtually cottage hospitals scattered through the smaller centers of population and staffed by the physicians of the district, each of whom attends his own patients. These cottage hospitals are to contain provision for midwifery, operating room, radiographic rooms and laboratories, and facilities for open air treatment and physiotherapy. They also should have dental clinic, services for prenatal care and child welfare, physical culture and the early treatment of tuberculosis and of occupational diseases; special departments for venereal diseases and tuberculosis. These centers are to be under the control of part time physicians. The secondary centers are much more complete in equipment; they are to be located in large cities, and existing hospitals are to be utilized for the purpose. These secondary centers would draw their patients from the primary centers or directly from the homes of the patients. It is proposed that the staff of existing hospitals take over the work of the secondary centers, such services to be paid for as special fees.—(Abstract from editorial in the Canadian Medical Association Journal, October, 1920.)

ADVERTISING MEDICINE

"There is a growing sentiment in the organized medical profession that a closer co-operation of the newspapers and the medical profession for the instruction of the people on health topics is the ideal method of accomplishing the main purpose of the press, both lay and medical, namely, the instruction of the people. Of course, in this instance, it means the instruction of the people on how to conserve health. Incidentally, such co-operation would eliminate much of the humbuggery and quackery that now fool the uninformed.

"Lately we have observed a more frequent use of a superior method of instructing the people on health topics, namely, the use of the name of some well-known institution or medical organization as the source of the information. Now this is, in our opinion, the proper method and the only sure manner in which medical knowledge can be conveyed to the people without the prejudicial thought that always surrounds individualistic opinions."—Abstracted from an editorial in the Journal of the Missouri State Medical Association, July, 1921.

The editor also suggests the advisability of magazines controlled by sound medical thought, but published with a view to popularizing health protection.

In "Better Health," published by the League for the Conservation of Public Health, California has such a magazine, which is now in its second year of existence. Every number of "Better Health" contains interesting and instructive articles, embodying sound views on medical problems. It is edited carefully, with a view to giving the public sound information and advice, and it should be in the hands of every citizen of the State.

THE CALIFORNIA ASSOCIATION OF RADIOGRAPHERS

There is published on page 382 of this number of the Journal the Constitution of the California Association of Radiographers. This organization has been formed and is now functioning as a recognized technical specialty of medicine and dentistry; a member of the section on technical specialties of the State Society.

In authorizing and carrying into effect this organization, the medical profession of California, through its house of delegates and council, has taken a step that will advance the cause of better medicine and clarify a situation that was becoming daily more dangerous to the public.

The unguarded, unprotected use of the Roentgen rays by incompetent persons already constitutes a serious menace to the health and even the lives of citizens of this country. The gravity of the situation is increasing very rapidly. Many new machines are being installed and operated by persons who have no adequate conception of their dangers to the patients, and who have only the most superficial knowledge of the mechanics of the machines or of the best technique for their use.

By common practice and more or less general consent, the confusion regarding the proper designation of persons working in this field is being cleared up. The physicians and medical organizations interested in the field of roentgenology and radium have adopted "Radiologist" as the designation of choice and "Radiographer" has been adopted as a satisfactory designation of the legitimate non-medical technician.

The Council of the State Society has created a new section on "Radiology (Roentgenology and radium therapy)," with Dr. Albert Soilard of Los Angeles as chairman and Dr. Howard E. Ruggles of San Francisco as secretary. This section, working in co-operation with other Radiological Associations, should be able to do much for the development of this specialty.

The Association of Radiographers, by recognizing themselves as technicians in a medical and dental special field; by providing for safe entrance requirements; by recognizing and practicing professional ethics; by voluntarily placing the control of their organization in a body, the majority of whom are professional men, have established for themselves a perfectly legitimate and necessary technical field, in which they should have the co-operation and support of the medical profession. Technicians are just as necessary in the field of radiology and as assistants to medical men practicing this specialty as they are in pathology, surgery, medicine or any other branch of professional work.

The nurse is the oldest of all technicians, and for a long time she was the only one. Today, in order to practice prevention, diagnosis and treatment of disease, the profession uses dietitians, public health nurses, medical social workers, radiographers, physiotherapists, physicists, chemical, bacteriological and other laboratory technicians. The technical help of these persons is necessary, not only because they are skilled artisans, but

because they conserve the time of the more expensively trained and consequently more highly compensated physician and thus help to keep down the cost of medicine to the public without interfering with the legitimate income of physicians.

Proper organization of these technical specialties, with their members operating under medical control, ought to clarify some of the special fields of medicine so thoroughly that the public may distinguish between the competent and the incompetent, and it ought to react in the establishment of legal safeguards in the use of dangerous diagnostic and remedial agents.

All work done by members of the California Association of Radiographers will be under the supervision of or upon the written prescription of a physician or dentist, and all reports by them are made to the physician or dentist who requests the work.

THE CALIFORNIA ASSOCIATION OF MEDICAL SOCIAL WORKERS

The organization of Medical Social Workers as members of the technical specialties section of the State Medical Society of California has been completed and the organization is now functioning. This action has been taken by the Council under authority of a resolution passed by the House of Delegates at the 1921 meeting in Coronado. The preamble and constitution of the new organization is published on page 381 of this number of the JOURNAL.

In creating this organization its members have taken an advanced stand in ethics, procedures and ideals. They have outlined a definite technical field for themselves; have created the machinery for control of that field and have aligned themselves with the organizations of physicians in a way that cannot fail to be of great advantage to the public, to the medical profession and to themselves. Altogether, the cause of better medicine and public health will be definitely improved, and the way has been provided to bring order, efficiency and system into essential activities that have heretofore not been so coordinated.

Physicians and public health officers will benefit by this organization because the work of its members will be in harmony with the ideals of the medical profession, and the results of their united efforts will be available for all.

The public will benefit because the services of these trained technical assistants will be made part of the program of better medicine and better health as conceived and carried out by physicians of preventive and curative medicine.

The medical social worker who renders the most important services to humanity does so when working in the atmosphere of medicine as the technical assistant to the physician. In order to render this service, she must have training and experience in that field and atmosphere, must be imbued with the ethics, ideals and spirit of service that ever characterizes the true physician.

This organization will have a place on the program of the technical specialties section of the State Society at the annual meeting in Yosemite

next May. Physicians and social workers interested in developing this program and in the success of the organization should communicate with the secretary.

THE ANESTHESIOLOGY SITUATION IN CALIFORNIA

The correspondence of the office of the State Society seems to indicate a lack of information regarding the status of anesthesiology in this State.

At the annual meeting of 1920 the house of delegates established the professional and ethical status of anesthesiology by passing the following resolution:

Whereas, The administration of inhalation anesthesia, to wit: the practice of anesthesiology, is the practice of medicine and demands a thorough medical education; and

Whereas, The practice of using technical assistants among the laity or the nursing profession for the giving of inhalation anesthetics, tends to lower the standards of medical education and needlessly endanger human life; therefore, be it

Resolved, By the House of Delegates of the Medical Society of the State of California, that the administration of inhalation anesthetics—the practice of anesthesiology—should be performed and practiced only by licensed physicians and surgeons, and that the custom of employing technical assistants among the nursing profession or among the laity is hereby condemned; and further, be it

Resolved, That no person other than a duly licensed physician and surgeon be employed or used by any member of this Society to administer an inhalation anesthetic, except in an emergency or in communities or districts where no physician and surgeon is practicing anesthesiology; and be it further

Resolved, That no hospital shall be deemed to have acceptable standards which employs a nurse or lay anesthetist to administer inhalation anesthetics or to practice anesthesiology, except in cases where duly licensed physicians and surgeons are not available, and then only as an employee of such hospital.

The attorney for the State Board of Medical Examiners in a legal opinion states, "one who is not licensed and who administers an anesthetic is subject to the penalties of Section 17 of the Medical Practice Act." Other legal opinions, including that of the attorney of the American Medical Association, are to the same general effect, and court decisions, including the Superior Court of at least one State, have definitely defined the giving of an anesthetic as the practice of medicine within the meaning of the law. The last session of the Legislature passed, and the Governor has signed, a law requiring thirty-two hours of instruction in anesthesiology for all medical students.

Thus, to sum up the situation, we find that the practice of anesthesiology is the practice of medicine. It is so established professionally and ethically by a resolution of our own house of delegates. It is so established legally by competent opinions and court decisions, and it is so recognized by the laws of our State which specifically provide instruction in the subject for medical students.

Medical institutions and physicians should obey the law and the ethics of their profession. If a sufficient number disapprove of the law and the ethics, there is machinery for changing them.

Original Articles

THE USE OF THE D'ARSONVAL METHOD OF COAGULATION NECROSIS FOR THE REMOVAL OF IMMENSE INTRAVESICAL OUTGROWTHS OF THE PROSTATE, SIMPLE OR MALIGNANT.*

By GRANVILLE MacGOWAN, M. D., Los Angeles.

Every one interested in urological surgery has been aware, during the past ten years of the wonderful curative effect of certain modalities of the high frequency current in the treatment of tumors of the bladder.

The good qualities of these therapeutic agents were first made use of for minor surgery of the skin—in getting rid of papilloma, small fibroid tumors, malignant growths of moderate size. It seems first to have occurred to Edwin Beer of New York to have instruments constructed by which advantage could be taken of this knowledge for the treatment of papillomatous growths of the bladder, the treatment of which by open operations is so unsatisfactory, and which by closed operations, by means of the cautery knife, heretofore, had been attended with great difficulty and real danger.

Following his experience, the writer and others, made use of both the Oudin and the D'Arsonval currents in the treatment of large papilloma and cancerous growths of the bladder, and, in many cases with such marked success that it seemed to him to be desirable as a method of assisting the removal of giant tumors, whether springing from the bladder wall, or directly from the prostate; whether cancerous growths distinctly pediculated but filling up large portions of the bladder; or tumors, simple adenoma, springing from either or both sides of the prostate: supplied with blood vessels of large size, ramifications of which extend from the mucosa into the connective tissue subdivisions of the growth, promising enormous loss of blood in any attempt to enucleate, the resulting wound being of such a character, that the staunching of the hemorrhage and its control by any kind of tamponade would be problematic.

The Oudin current is monopolar, and is not available for this purpose, because it is not hemostatic, excepting when the heat of the current becomes sufficient to char the tissues; whereas the bipolar, or D'Arsonval current, is distinctively disorganizing, causing coagulation necrosis and dessication of the tissues. In this process, the fluids of the tissues are cooked, the endothelium of the blood vessels destroyed by the heat of the process of boiling and subsequently dried up. This destruction does not extend very far from the end of the metallic electrode; its action is not rapid. The process does not appeal to those who want to get in and out quickly, without regard to surety of cure. It is not a therapeutic measure for the showy operator. It is practically a bloodless one and one eminently safe, so long as the end of the

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

electrode is not thrust through the tissues that lie outside of the bladder walls towards the rectum or towards the peritoneal cavity. As the dessicated tissue increases, it is snipped away with scissors until the margin of destruction is approached, and this is evidenced by the ability of the vessels to seep a little bloody serum. When the process has been continued until it reaches into the walls of the bladder everything that appears to be involved in the growth is to be dessicated, and as dessicated removed with the curette until all of the hardened infiltrated portions of the bladder wall marking the site of the tumor have become flexible to the finger and all the blood vessels of supply have been destroyed by the current. If the line of direction of the growth is towards the rectum, the gloved finger of an assistant should be kept in this cavity so as to give timely warning of too close approach to the gut. There is always a considerable degree of heat which precedes the point of the electrode, and this is easily felt in the rectum. One can be quite safe in coagulating the tissues so long as the finger can be kept comfortably in the rectum. If the growth has sprung from the prostate, when all of the intravesical portion has been removed in this way, as it can be without any hemorrhage, then the electrode can be thrust into the capsule of the prostate on either side and these tissues also coagulated. It is not necessary to proceed to the extent of absolute destruction, as one must in cancer of the bladder or in cancerous growths springing from the prostate, unless it is very plain, to the sense of touch, that the probabilities are overwhelmingly in favor of the growth being malignant, in which case it should be loosened up after finding the plane of cleavage, and gradually enucleated, as the tissues are cooked, the capsule thoroughly treated with the spark, with all the outlying structure that seemed to be involved in the malignant growth. In the case of malignancy, further certainty of cure is acquired by introducing within the capsule of the prostate, after the prostatic tumors are removed, an appropriate quantity of radium and leaving it there for an appropriate time.

In this connection, I have to report five cases, a successful treatment of only one of which could, in all probability, have been accomplished in any other manner.

1. The first is a case of a malignant growth involving a portion of the trigone and a part of the wall of the bladder on the left side. Mr. Peters, a farmer of Ventura, patient of Dr. Stockwell.

2. Mr. S. K., sixty-three years of age, a gentleman of Anaheim sent to me by Dr. Jos. King on the 30th of September, 1919, who had an enormous epithelioma of the bladder, which almost filled the viscous, complicated with contracture of the bladder neck, and a small adenomatous tumor of the prostate of the Albarran type.

3. Mr. B. H. of Tacoma, seventy-two years of age, who came to me March 26, 1920. In this case the prostate almost filled the bladder, and serves as a model for the picture No. 1 on the blackboard. There was almost no room in the bladder. The tumor could be felt and seen through the abdominal wall, extending almost to the umbilicus after 200 cc. of urine had been withdrawn. The blood vessels, coursing over it, as was ascertained when

the bladder was opened for preliminary drainage, were from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter.

4. Mr. B. R., merchant, sixty-nine years of age. Sent to me by Dr. Burlew of Santa Ana on December 10, 1920.

His prostate was enormously enlarged both intra-urethrally and intravesically. At the preliminary cystotomy it was found that it nearly filled the bladder. It was dark blue in color, very soft and bled at the slightest touch. The fact that, in spite of its size and the great irritation present, there was but 15 cc. of residual made me much more than suspicious that I was dealing with a sarcomatous growth, and I was not anxious to enucleate it without preceding coagulation necrosis. This was accomplished, after which the tumor was readily removed without hemorrhage.

5. Mr. F. P., attorney, sixty-three years of age. resident of Los Angeles, joint patient with Dr. Lasher Hart. This man had had urinary irritation, frequency, and difficulty in passing his water, for a number of years because he had a distinct stricture of the perineal urethra; two years ago he had an attack of retention; catheterization was easy at that time. On the 12th of March, 1921, he came to me, after an unsuccessful attempt by my colleague, a urinary specialist of ability, to pass a catheter, having complete retention and suffering much pain. He had not been given a general anesthetic, but he had been narcotized; the bleeding was excessive. He was taken to the Clara Barton Hospital and a supra-pubic cystotomy done upon him for drainage.

In recent years, with men over sixty, I invariably do a double vasectomy preliminary to the supra-pubic drainage, so that my patient may be spared the depressing effects of epididymitis, which so frequently occurs in these prostatic operations. This is an innocuous procedure in men of this age, and one to which they readily give consent. Upon doing this operation, on the right side, we noticed that the bleeding was excessive, that the intimate blood vessels supplying the vas were as abundant as they would be in acutely inflamed tissue, and that the tiniest ones bled excessively. On the left side there was the remnant of an old epididymitis, which dated back some twenty-five years. There appeared to be a very moderate hydrocele, but when we cut down upon the cord, to isolate the vas, we opened the sac of a hydrocele of the cord, which extended up to the internal ring, which opened, it was imperative to get rid of. The sac dissected out without difficulty. The hemorrhage following was as if erectile tissue had been wounded; a great many ligatures were applied and the wound closed with drainage, after which the bladder was opened. In cutting the skin, the deep fascia and the muscular wall of the abdomen, we had the same experience with the blood vessels repeated; all had to be tied, and double. When the bladder was opened a dense, dark blue colored tumor, which felt cystic, presented itself, pressing tightly against the bladder wall and was lightly scratched by the knife used to make the incision. The limited space in the bladder was filled with clots from the previous hemorrhage, probably a handful being scooped out and the scratch in the mucosa of the tumor fairly spurted blood. To this tissue I fearfully applied a fine catgut ligature, with a small round-pointed needle; it controlled the bleeding largely, although there was some from the needle holes. A long trailer was then packed in the bladder to stop the bleeding and act as a drain. About this time it was noticed that the scrotal wound was evidently filled with blood clots, and the hemorrhage had not been stilled. The wound was reopened and the tissues mattress; every large and small blood vessel required a ligature. The wound was packed again and left open. He was given an injection of horse serum to increase the coagulation point of his

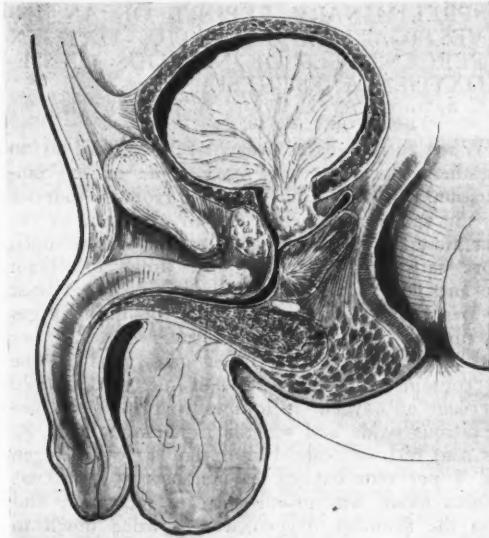


Fig. No. 1, Case 3. Schematic drawing illustrating original and relative size of growth.

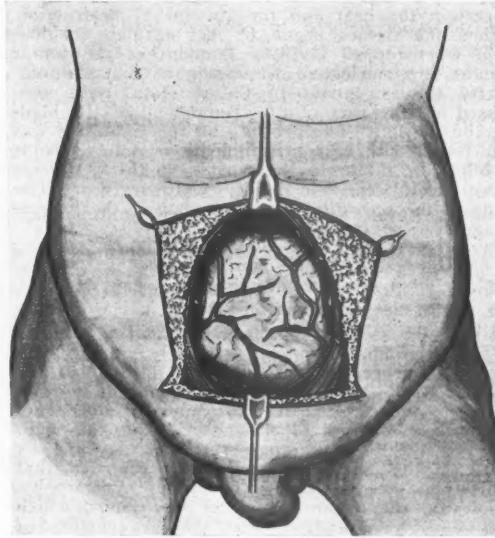


Fig. 2. Made at time of operation on Case 3. 1. Showing the free exposure required. 2. The manner of securing the bladder to the abdominal wall. 3. The large sinuses coursing over the bladder tumor.

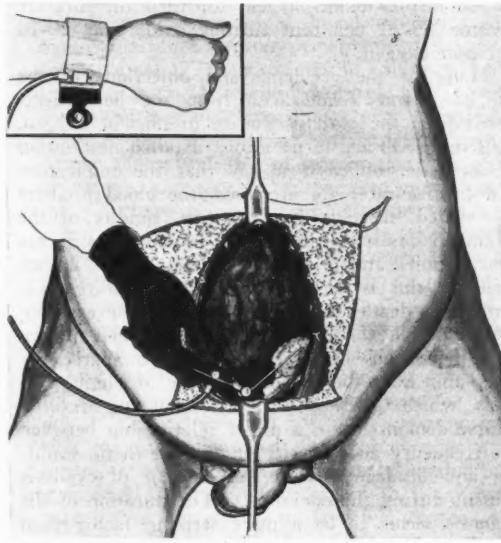


Fig. 3. Made at time of removal of the tumor of Case 5. Showing the mode of securing the necessary exposure. 2. The method of using the dесsiccating electrode, the tumor having filled the bladder is shown three-fourths removed. 3. Small insert shows the wrist electrode.

blood. He had a prompt reaction with rise of temperature to 104.

On the 4th of March I removed the packing from the bladder wound because he had been having severe tenesmus, frequently repeated, and much bleeding. On the 17th I took his blood count, which showed: hemoglobin, 75%; white cells per cmm, 6,000; red cells per cmm, 4,310,000; color index, 87%; polymorphonuclear leucocytes, 74%. Red cells appeared normal in size and shape. Platelets one plus.

The following day, believing that a blood transfusion would be necessary when I came to remove the tumor, which it was obvious could not be de-

layed on account of the severe and almost constant tenesmus. Dr. Zeiler reported that his blood coagulation then appeared normal. He grouped him and reserved one of his group for transfusion on call.

On the 19th, with an abundantly large aeroplane incision, which extended up to the navel, we obtained access to the tumor, so that it did not require much handling. It was the size of the fist of a large man, very soft, purplish and flaccid and was composed of the lateral lobes of both sides of the prostate, with a tumor mass connected with and springing from the left side of the bladder wall, outside of and above the ureter, which was completely concealed.

At the time of commencement of operation, the appearance of the tissue of the scrotum, the upper thigh and the lower abdomen on both sides, was such as to make it very uncomfortable for the operator, because the black and blue discolored in the tissues extended on both sides almost up to the ribs. I was very content to have at my command the agent of coagulation necrosis to aid me in dealing with the intra-vesical difficulties.

Picture No. 2 is intended to illustrate this tumor before it was attacked with the D'Arsonval current. You will notice that the bladder wall, which is very thick, is attached on both sides with two strong silk ligatures to the fascia of the rectus muscles; two similar sutures attack the anterior part of the bladder wall and control it, coming out just above the pubic bones; this, together with the Judd speculum, gave us full command of the tumor, which extended almost to the extreme top of the bladder. This growth was subjected to coagulation necrosis, plenty of time being taken to cook the tissues thoroughly, and the destroyed portions removed from time to time with scissors or rongeurs, until the tumor was reduced to the level of the bladder neck. This stage of removal is seen in illustration No. 3. At the commencement any little manipulation of, or the slightest touch on the growth, caused excessive hemorrhage of scarlet blood. The process of coagulation necrosis was continued down into the prostatic portion of the tumor, that is into the capsule of the prostate on the left, everything being destroyed as we went along. The tumor was pulled away from the rectum, frequent inspections being made to

ascertain the heat and the amount of destruction. When the tissues began to feel normal, coagulation was stopped and the remnant of the tumor on the left enucleated. It was found that the infiltrated tissues outside of the prostate itself comprised a large part of the lateral wall of the bladder on the left. The prostate on the right side was enucleated with very little difficulty. All the bands holding the tumor to the capsule on the right side were coagulated before they were severed. The time of the operation was three hours; the hemorrhage was negligible.

After these coagulation necrosis operations there is always a great deal of sloughing of the destroyed tissues; it usually takes about three weeks for the tissues to clean themselves, just as it does on the skin.

The tenesmus which was present before his bladder was opened did not disappear until about the 20th of April—that is more than a month; it gradually became less acute and came at more rare intervals. Portions of the tissue from the right side of the prostate were sectioned for me by Brem, Zeiler and Hammack; they reported that indications were those of simple hypertrophy. Clinically, the upper portion of the tumor, which was entirely destroyed, was very suggestive of sarcoma.

In the case of H., case 3, the gross appearance and the stone-hard feel were suggestive of carcinoma; no sections were made. On account of the enormous blood sinuses present in H.'s tumor, I had no scientific curiosity to determine whether it was actually malignant or not. I was too much afraid of getting into trouble if I broke these sinuses. In the last case related, that of P., I had had enough experience with his bleeding propensities already to effectively stay my hand. When a tumor will spurt red blood like a severed artery when it is injured by a knife, my scientific curiosity ceases. I have no desire to make any sections for the purpose of determining whether it is carcinoma, sarcoma or some other form of growth. I am interested in subjecting the man to as little risk as possible. I felt as a surgeon reasonably certain that both of these tumors were potentially malignant.

Peters, case No. 1, was cured of his cancer of the prostate and bladder and died this spring, almost eighty years of age; for several years after the operation he was inspected by me twice a year; he never showed any evidence of further malignancy of the prostate or the bladder.

K.'s tumor (case 2) was frankly a malignant one; he had a stormy recovery, but he is now actively engaged in business, and while he does not report to me, I have learned from sources of information from people who surround him that he appears to be in every way well, and as he constantly is expanding his business enterprises, I have no reason to doubt that his cure is a permanent one. He quarreled with me because, in order to make the assurance of his cure more certain, I wanted to employ radium in the pedicle; to this he objected.

Mr. H. (case 3) has reported to me recently that he is entirely well in every way; that he has excellent control of his bladder and has no symptoms of any urinary trouble.

In the case of R. (case 4) the tumor was of a type from which we always see excessive bleeding, and for which many operators feel obliged to pack the cavity from which the tumor is removed, and suffer a great deal of anxiety, and occasionally lose a patient from hemorrhage, unnecessarily, if the coagulation necrosis is available.

Mr. P. (case 5) represents the type of tumor which without this agent would stand a very small chance of the patient surviving the first few days following the operation.

A PRELIMINARY REPORT OF AN INVESTIGATION INTO THE OXYGEN PERCENTAGES OF NITROUS OXIDE-OXYGEN ANESTHESIA.*

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When nitrous oxide was first introduced as an anesthetic agent, it was used alone or in combination with air. In 1868 Dr. Horace Andrews of Chicago was the first to call attention to the fact that nitrous oxide and oxygen was a much more satisfactory mixture. In order to obtain the anesthetic state in average individuals, at least 80 per cent of nitrous oxide in the inspired gas mixture is necessary. This leaves only 20 per cent to be occupied by other gases, and as the air contains 80 per cent useless nitrogen and 20 per cent of oxygen, it follows that in a mixture of nitrous oxide and air the percentages were 80 per cent nitrous oxide, 16 per cent useless nitrogen and 4 per cent oxygen. Sometimes 80 per cent nitrous oxide was insufficient for relaxation and then the available oxygen was crowded down to 3-2 per cent. This necessitated very short operative procedures, for at least 10-15-20 per cent of oxygen is necessary to support life for any length of time. It was therefore a great step in advance to use nitrous oxide-oxygen, for then the mixture became 80-90 per cent nitrous oxide and 20-10 per cent oxygen.

Many of the accidents and objections to the use of nitrous oxide arise from the bad effects noted from the cyanosis due to insufficient oxygen. It is not necessary to go into a detailed description of asphyxia, suffice it to say that the respiratory and cardiac rates are increased, the blood pressure is elevated, there is deep cyanosis, rigidity of the voluntary muscles, spasmodic jerking movements (jactitation) and dilatation of the pupils. Treatment of this is the administration of oxygen, if untreated death rapidly ensues. However, momentary asphyxia of the above type, when oxygen is at hand, has been proven to be comparatively safe, and it is the prolonged state of slight cyanosis which gives the really damaging results. Morse demonstrates "a direct relationship between the frequency and severity of post-anesthetic vomiting and headaches, with the amount of cyanosis present during the operation. The duration of the cyanosis seems to be a more striking factor than the intensity, for transient cyanosis, though quite marked, was not succeeded by these sequelæ, while low grades of slight duskiness, prolonged, gave evidence of post-anesthetic acidosis." Aside from this is the question of damage to the heart muscle from an insufficient supply of oxygen.

The question then arises, What is the percentage of oxygen in the mixture of nitrous oxide and oxygen that is safe? A search was made through the literature for statements concerning the percentage of oxygen need, and these varied from 2-20 per cent of oxygen. However, the calibrations on most machines are incorrect for absolute percentages, so that the wide range of figures cannot be relied on or the low recorded per-

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centages be wholly condemned. It was not until Connell perfected the mechanical difficulties of gas delivery that a definite table of nitrous oxide-oxygen percentages, with the results of varying mixtures, could be worked out. He found that any mixture less than 92 per cent nitrous oxide and 8 per cent oxygen was extremely dangerous and was useful only for momentary procedures, but even for this the use was condemned. He found the mixture 92 per cent nitrous oxide and 8 per cent oxygen, satisfactory for induction only. The zone recommended for abdominal surgery had the mixture of 89 per cent nitrous oxide and 11 per cent oxygen. In this zone the color of the patient was faintly cyanotic. The zone for surface surgery was 86-84 per cent of nitrous oxide and 14-16 per cent oxygen; here the color was normal. This zone with the addition of a slight amount of ether, when necessary, in suitable cases is recommended as best for all work, including abdominal surgery. A mixture of 80 per cent nitrous oxide and 20 per cent oxygen gives a subconscious analgesic state suitable for obstetrics.

Now, various conditions in individual patients arise to upset the minute regulation of gas proportions. It was the experience of Marshall and Cannon in war surgery, that patients operated on following severe loss of blood, or during shock, required a much greater percentage of oxygen for operative safety, than did normal subjects. With this as a basis, Jones and McPeek are at present conducting researches on guinea pigs, using nitrous oxide oxygen anesthesia. After determining the proper and safe degree of oxygenation in a normal set of pigs, and the N_2O-O_2 per cent curves plotted, the pigs have been ex-sanguinated to varying degrees and then reanesthetized. In their preliminary report they state that they then found that the same proportion of gases safe in normal animals were dangerous and fatal to those exsanguinated. In fact it was possible to determine by the reaction of the exsanguinated pigs that a blood loss of 20 per cent demanded three to four times the amount of oxygen of normal pigs. This, therefore, is a very definite indication for using increased oxygenation with nitrous oxide, in the presence of recent hemorrhage.

Connell had previously stated that any altered capacity of the blood to transfer oxygen, either in decreased rate of blood flow, or diminished hemoglobin content, would upset his charted table of zones, and that persons with reduced hemoglobin, septic conditions, excessive or rapidly increasing weight, and growing children demanded a greater percentage of oxygen in N_2O-O_2 anesthesia. He stated that the percentage of oxygen need is approximately in direct ratio to the degree of anemia present, and that a patient with 50 per cent hemoglobin requires for the zone of light anesthesia 18-20 per cent oxygen instead of 11 per cent required by normal man.

During the war some very interesting investigations were carried on at the Mineola Flying Field, concerning the oxygen need of men, candidates for the aviation service. The response of the aviator to a decreasing supply of oxygen was tested by experiment lasting from 25 to 145 min-

utes. Three methods of oxygen variation were employed. First—A chamber was constructed, in which it was possible to reduce the barometric pressure, and thus duplicate the pressures and oxygen tensions of varying heights in the air. Second—A rebreathing machine (with stationary barometric pressure of sea level), which started out with ordinary air, but gradually with the rebreathing the O_2 content was decreased and the CO_2 was absorbed with caustic potash. Third—Respired air was diluted with increasing amounts of nitrogen. The results obtained from the three methods of oxygen variation were the same, proving that the barometric pressure of high altitudes is not the causative factor in mountain sickness, but that the difficulties in breathing, rapid pulse rate, headache, cyanosis and syncope are due to the diminished oxygen tensions of high elevations.

As the oxygen in the air inhaled from the apparatus was reduced, the man was thereby virtually elevated to a corresponding altitude. Thus a mixture containing 20 per cent oxygen has a barometric pressure of 760, and the altitude is sea level. When the oxygen percentage is reduced to 17.9 per cent it equals that of an elevation of four thousand feet and a barometric pressure of 651.

Oxygen Percentages	Altitudes	Barometric Pressures
15.9	7,000	579
14.2	10,000	516
13.2	12,000	478
12.2	14,000	444
11.3	16,000	412
10.0	19,000	368
6.4	30,000	230

As the oxygen percentages were decreased, almost the same symptoms were noted in these men as are noted by anesthetists when the oxygen content becomes insufficient during anesthesia, that is, an increase in respiratory volume and rate, an increase in pulse rate, an elevation in blood pressure and the appearance of cyanosis. There is headache and nausea, and the counterpart of this we have in N_2O -oxygen anesthesia, as the post-anesthetic headache and vomiting in cases that have been somewhat cyanosed during the larger part of the anesthetic. In the aviators' tests, some men compensated so easily and so well that they stood, for brief intervals, as low as 6 per cent oxygen or an altitude of 31,000 feet, which is higher than any heavier-than-air machine has ever reached. Other men failed to compensate at all, or did so poorly, and, therefore, could not endure even the slight oxygen deficiency of moderate altitudes.

The respiratory and cardiac centers are ordinarily stimulated by about the same fall in oxygen pressure. In some subjects the first response began at an oxygen percentage of 17.9 per cent; while the majority showed the first response between 15.5 per cent to 16.5 per cent. This, therefore, means that in the average individual, when the oxygen content of the inspired mixture becomes less than 15 per cent, he must neces-

sarily put out some effort to keep metabolic processes at the proper level, and it would seem that low oxygen percentages under anesthesia would be very similar to low oxygen percentages at high altitudes.

We then have the following to consider: Is the patient in question, under anesthesia, able to stand the necessary increase in pulse rate, respiratory rate, and blood pressure elevation? and is this particular patient one of those who would react well in the aviator tests?—for there were three very definite types of reaction to the tests made. The optimum type showed no response until the reduced oxygen reached about 15 per cent, then there was a gradual increase in pulse, respiration and blood pressure until 7-6 per cent oxygen was reached, when the blood pressure, pulse and respiration started to drop and the patients fainted, with rapid recovery with administration of oxygen. The second type showed response at 17.9 per cent O₂ and the compensatory reactions were excessive, pulse, respirations and blood pressure went very high and collapse came at 9.8 per cent oxygen, with a much longer time required to recover, and with severe headache for some time thereafter. A third type is seen in elderly people when there may be practically no response, no rise in blood pressure, very little rise in pulse rate and respiratory rate. The compensatory mechanism seems to be entirely overwhelmed. The counterpart to this type is seen in people who are unable to have ether added to the N₂O-O₂ mixture, for relaxation, and who may become cyanosed in an effort to keep them relaxed sufficiently for operative work, and then, although there is cyanosis, there may be no change in pulse, respiration and blood pressure. These patients may then show post-operative myocarditis, due to the fact of the insufficient amount of oxygen supplied the heart muscle during the operation.

From the foregoing it can be seen that no person was able to stand an oxygen percentage of less than 15 per cent without certain definite compensatory reactions showing. This might be directly applied to N₂O-O₂ anesthesia, to the effect that no patient should receive less than 15 per cent oxygen, unless his heart allowed him to be placed in the optimum class above, and that no patient with any symptoms of cardio-respiratory strain be given less than 18 per cent oxygen, and that such patient would be better if a small amount of ether were given instead of relaxation.

In 1893 some experiments were performed on rabbits and dogs under anesthesia, blood was taken by Oliver and Garrett and tested for the gaseous content. One animal was given pure N₂O without O₂, and blood was withdrawn during deep cyanosis. The analysis showed:

	Before Inhalation	After Inhalation
CO ₂	34.3%	15.66%
O ₂	22.0	3.49
N ₂	1.8	11.23
N ₂ O	----	22.49

This experiment was the only one of its type found in a very careful search of the literature.

Lundsgaard, and afterward Stadie, worked out the oxygen percentages in venous and arterial blood in cyanosed and uncyanosed individuals. But to our knowledge no one has worked out these under varying percentages of oxygen intake during anesthesia. Lundsgaard collected venous blood and analyzed it first as to its total oxygen combining capacity and second for the actual amount of oxygen present in the sample. The difference between the two he termed the oxygen unsaturation. The extent of oxygen unsaturation in venous blood of normal individuals averaged 5.7 cc. oxygen per 100 cc. blood. He then examined a series of patients with decompensated hearts, the unsaturation here averaged 12.4 cc. per 100 cc. blood. With a return to compensation he found the oxygen unsaturation again within normal limits. Stadie found the venous oxygen unsaturation in cyanosed pneumonia patients to be 10.0 cc. oxygen per 100 cc. blood. He found that in normal individuals there was an unsaturation of 1.1 cc. oxygen to 100 cc. of arterial blood and in cyanosed individuals 5.6 cc. O₂ unsaturation per 100 cc. of arterial blood.

With this experimental work before us we thought that the same line of investigation could be carried out under anesthesia, with blood oxygen determinations to indicate what the degree of oxygen unsaturation is under varying percentages of oxygen intake.

Our proposed experimental investigation is to anesthetize dogs with nitrous oxide and varying percentages of oxygen, to find the percentage of oxygen which first calls upon the compensatory mechanism of the animal. This will be done by Kymographic records of pulse, respiratory rate and blood pressure. We then will repeat the experiments, using rebreathing, and thus determine what change in oxygen percentage is necessary in the presence of carbon-dioxide; to then repeat a third time on exsanguinated dogs to determine the oxygen needs of low hemoglobin. It is proposed to take samples of blood, in all of the three types of experiments, at varying levels of oxygen intake percentages to determine the degree of oxygen unsaturation in the blood under anesthesia, without cyanosis and with slight, moderate and intense cyanosis.

As a matter of practice anesthetists ordinarily use the color of the patient's cheek, forehead and finger nails as the guide to the safety of anesthesia, but Lundsgaard found that a considerable degree of oxygen unsaturation in the blood may be present without showing as cyanosis. He also found that cyanosis could not be produced in patients whose hemoglobin was less than 35 per cent. So that an accurate means of gas delivery with an oxygen percentage seldom less than 15 per cent is much to be preferred to the more or less hazardous methods usually employed.

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CONDITIONS OF INDUSTRIAL ACCIDENT PRACTICE IN CALIFORNIA*

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California was the nineteenth state in the Union to enact an industrial accident law for the protection of the injured laboring man. This measure was compiled by our legislators after an examination of laws adopted by other states and similar laws of other nations.

Subsequently other states have enacted similar measures, and in a like manner have used the California law as a model for their state. In their legislative consideration and press comments, the medical profession of California were frequently reported as being well satisfied with their law. This, I believe, is a misrepresentation and a misconstruction of the attitude of the majority of the members of our profession, and particularly the members of this Society. One can safely state that nothing has occurred in our organization which has caused so much dissatisfaction, discontent, suspicion and bad feeling as the Industrial Practice Act of California.

The bill was looked upon with considerable suspicion by all, and it was only after being assured and reassured by the officials of our Society that the rights of every member were amply protected, with proper safeguards included to adjudicate all differences among ourselves, also between ourselves and the insurance companies and between the insurance companies and the patients, that it was finally accepted by the various county units.

The initiatory agreement entered into between insurance companies and the State Medical Society at Santa Barbara in 1914 was adopted by the House of Delegates, and is explained in detail in the May and June numbers of the California State Journal of Medicine, 1914, and provides under the heading "Choice of Physicians" as follows: "That the employer (or insurance company) is to have a right to a free choice of physicians and such selections are to be made from lists of names furnished by insurance companies. These lists of names to be the lists of members of the several County Medical Societies which collectively compose the Medical Society of the State of California, but no member may be compelled to do the work if he does not wish to. Provided, that in counties where there is no County Medical Society or in *Special Cases* where the employer may desire to secure the services of some physician who is not a member of his County Medical Society, he reserves the right to do so. Also, provided that in the larger centers the Societies are to prepare lists of names of members who are willing to do the work and to arrange so that the services of some of them may be secured at any time by means of a telephone exchange or some other plan by which their whereabouts may be ascertained. And also, provided, that the companies are to be permitted to advise their policy holders that certain physicians have in the past done work for them satisfactorily. It is understood that an insurance company may have a regularly appointed medical referee in any given locality." Editorially the Journal further states: "Any member of the Society may be called in if he wishes to do this work." "Any member has a choice to keep his patient and treat the injured one if he wishes to do so—other things being equal."

The general plan resulting in this agreement was formulated at a number of conferences between Dr. Jones, representing the State Society, Dr. Kugeler, of San Francisco Society, Dr. Parkinson, representing the council, Dr. Gibbons, representing the Industrial Commission and various representatives of insurance companies and approved by the Adjustment Board representing fifteen different companies. This contract was enacted for the purpose of protecting patients, employers, insurance companies and members of this Society. Gradually it has been abrogated until at present the rights of the majority of our members are ignored, with patients and employers being compelled to accept attention from men in whom they have neither confidence nor acquaintance.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

It is stated that the reason of this change is on account of the inefficiency of the doctors, both as to their methods of caring for the injured and the preparation of proper records and reports. It should be remembered at this time that many causes of trouble have resulted in surgeons trying to protect patients from unjust and commercial methods of underwriters. The practitioner is equally interested with the employer and the underwriter in restoring his patient to duty, and the insinuations received from insurance people that the medical profession have neglected this important point applies only to individuals and not to the profession at large. The structure of the practice of every physician and surgeon is based on the foundation of his ability to cure his patients and their subsequent early return to their vocation. Membership in our State Society should be made a sufficient guarantee of his qualifications to practice his profession.

Every American, be he working man or executive, believes that he has the inalienable right to select his own surgeon, and every sincere practitioner of medicine and surgery concurs with this principle insofar as it is compatible with proper attention and care. The California Industrial Practice Act, as interpreted by the Insurance Companies, annuls this and places their selection absolutely in the hands of the carriers, dictating and enforcing their wishes by threatened withdrawal of compensation.

The paragraph previously quoted from the State Journal recites the necessary constitutional authority to protect every member of this Society and is given in full in hopes that our officers, state and county, will cease to allow the abuse of authority by insurance companies and the brazen activities of industrial physicians and surgeons.

If its provisions have been nullified by time, by law, interpretation, or amendment of the law, it has been done without our knowledge or consent, and the officers whose duty it is to secure its enforcement are employed to fulfill their trust, and in turn to exact proper co-operation from like officers of the County Units.

Compliance with industrial people in their interpretation of the Industrial Practice Act should cease, and advice and rulings sought from our own legal department. To accept interpretation of a law as final without independent advice or court decision is a dangerous precedent and brands us with the mark of inefficiency.

Careful inquiry by correspondence and personal investigation fails to discover any definite methods used to select industrial surgeons by the underwriters, other than personal inquiry by insurance medical directors.

In our section those chosen are not noted among the medical fraternity as enjoying any distinguishing halo of intelligence. They are average men doing average work. Their dissatisfied and not always properly cared for patients are constantly soliciting assistance from those not privileged or accepted as competent by the underwriters.

The privilege was accorded the writer, with others, to serve on a committee of investigation of Industrial Practice conditions in a labor section close to Los Angeles. The committee found that two men had been chosen to supplant the local surgeons. One was imported from Los Angeles, and his idea of professional courtesy was to announce in a provincial manner on the street corners and in drug stores that the local men were incompetent to perform surgery and that he had been brought to the community to save their lives and limbs. Neither of the new men had the necessary X-ray apparatus and to this day have to refer their Rentgenology to their predecessors. Yet the chief reason given for their appointment was that the offices of the local men were not properly equipped to handle industrial work. The men supplanted are well known, not only in their community, but in Southern California, and some of them were competent enough to have been selected for hospital service by the Surgeon General of the United States Army during the World War. Can you imagine a more unpleasant or disagreeable situation than exists among the members of this Society who now practice in this community?

The hospitals used in our section by industrial surgeons are not characterized by their efforts to recognize the principles and assume the obligations of standardization, but rather have enjoyed the privilege of housing their patients through the relative cheapness of their charges. This confronts us with these questions: Why does one set of patients have in the same hospital a cheaper rate than another? Why is their anesthetic fee cheaper? Why is their X-ray work cheaper, etc.? It is unfair that your patients pay regular rates for anesthetics, X-ray, laboratory work and nursing, etc., while the insurance companies enjoy special rates for the same privileges.

Industrial surgeons are actively engaged in educational propaganda for recognition of their work as a special branch of surgery. This is a laudable ambition, and as long as they assume all the responsibilities of a specialty, it should be encouraged. We look to the specialist as the main source of educational instruction for the future. Socially and professionally he is presumed to represent the highest type of medical men. He is expected to limit his work, and if anything, is more deeply obligated to acknowledge the authority, and secure the enforcement of the constitution and by-laws of our Society and its component units.

The industrial surgeon as a specialist, must assume similar obligations and cannot deny the right of others, qualified by their county unit, to assume the care and responsibility of industrial cases without being deprived in return of the right to care for civil work not covered by the Industrial Practice Act.

When we are prepared to strictly limit the passing of sounds to the urologist, the swabbing of the throat to the laryngologist, the opening of boils to the surgeon, the curing of

fissure to the proctologist, we may then consider the merits of the industrial surgeon as a specialist, but would still be confronted with the problem as to where the dividing line should be between the industrial and general surgeon.

Because some, by reason of opportunity, personal solicitation, public proclamation of their ability, secure an inordinate share of any branch, hire stenographers and clerks to attend to their claim agency work, turn the care of their patients over to salaried assistants, who may be registered in the state but frequently not members of their county unit, accept salaried positions or consultation work from a flat fee broker, take cases away from fellow members equally competent by threatening the patient with loss of compensation, refuse to call fellow members in consultation when requested by the injured, post their names in factories to the exclusion of all others demanding to be called in case of accident by threatening cancellation of insurance, should they expect the recognition due a specialist?

Medical directors of insurance companies are usually conscientious in their efforts to protect their employers, but they must be reminded that loyalty to this Society is their primary obligation and asked to guard against the tendency of permitting their activities to be exclusively used for the benefit of insurance companies and neglect the welfare of our personnel. Their complaint that many are careless in making out proper reports, which necessarily must be complete, adequate and accurate, is unquestionably well-founded and must be corrected with a prompt willingness on our part to conform to their requirements. Our council has wisely provided the means for the adjustment of all disputes in the following paragraphs of the Santa Barbara agreement:

"Charges in excess of proper ones or bills unduly padded by fictitious or unnecessary visits should be deemed unprofessional conduct and subject to discipline by suspension or expulsion. In case a bill rendered by a member is regarded as excessive by the employer (or carrier), it should be submitted to the County Medical Society for scrutiny and adjustment, and if ther still be failure to agree it may be submitted to the Council of the State Society or the Industrial Commission."

To insure us protection against the abuse of insurance by those who are well able to pay regular fees and likewise against the cutting of fees, our Council and insurance representatives accepted the following additional clauses:

"That incomes in excess of the maximum covered by law, \$1666 a year, are not considered in this fee schedule." "No contracts at flat fixed fees for all work are to be made and those now existing are to terminate at the earliest possible date."

It is well known that men earning annual incomes extending into many thousands are enjoying the benefits of the industrial accident law. Stockholders of manufacturing corporations occupying official positions are classified as salaried men, and no matter what their wealth or earning capacity may be, they may, and frequently do, accept industrial aid.

The use of flat fixed fee system, instead of being terminated as directed, is becoming more popular. There is more money in it for the underwriter, who is usually not connected with a National or board company, and an easy salaried job for the doctor with few, if any, of the ordinary cares of practice.

The flat fee is usually arranged in the following manner: A large corporation is, for instance, engaged in shipbuilding; spends in insurance, based on the regular fee schedule, \$150,000 annually. The flat fee broker or underwriter approaches the concern and offers to undertake their contract for \$125,000 a year, a saving to the corporation of \$25,000. The broker maintains a medical office and employs regular physicians, surgeons and consultants on a salary, many of whom are members of this Society.

Not satisfied with beating the fee schedule, he often skims a little cream from the doctor. One of our members states that he was offered the position of operating surgeon by an underwriter, provided he would rebate a percentage on hernias and other operations. This system, from all angles, is an absolute violation of the tenets of our Society.

The propriety of insurance doctors holding executive offices in the State and County Societies under ordinary circumstances cannot be questioned, but when found using their positions to further the claims of insurance companies and their medical departments as against their fellow members it is possible that the just demands of our membership for impartial recognition, careful consideration of their complaints, and a respectful hearing for their suggestions and amendments may not be courteously entertained. No section should be barred from office, but when occupying executive positions they should be careful not to deprive others of constitutional rights nor accord the privileges of our publications to outsiders when their own professional attitude is under consideration.

The fact remains that discord and contention have arisen among our fraternity, and the lack of appreciation of professional courtesy and medical ethics by industrial practitioners is the underlying cause. Ethics, in a broad sense, is the science of ideal human character. It pertains to all walks of life and is a fundamental law of the A. M. A. and its integral parts. Its application is the powerful influence which distinctly maintains the higher plane of the professional life over that of the commercial.

Two distinct classes of medical men are directly concerned in solving this problem. Those employed or designated by insurance companies, including specialists, who are directly responsible to this Society for the professional conduct of those with whom they consult, and those which comprise the balance of our membership.

The scope of industrial insurance already includes social medicine. Health insurance and State medicine are knocking at our door. The future of all is at stake and the internist, obstetrician, pediatrician and other specialists must become equally interested.

It is of prime importance that both sections should work together to devise a solution of this problem. All must maintain an attitude of sincerity and absolute fair dealing on a basis of protecting the profession at large. The blame for this utter confusion cannot be placed entirely upon the insurance companies. A communication received from the medical director of the State Accident Industrial Commission implies that insurance companies have never been supplied with a list of properly qualified surgeons by the County Units, nor have adequate means for securing prompt service of physicians been provided. Thus it is that more diligence must be exercised to see that everything is done to obviate the impression of negligence.

Nothing is more productive of bad feeling in the profession than to have one group set themselves up as superior and exclusive practitioners, using their attainments to monopolize certain lines of practice to the exclusion of others who naturally resent this lack of appreciation of our common interests as embodied by our State membership organization.

The man who assumes that he alone, with a few others in each unit, is the only one competent to do any special line of work is presumptuous, disloyal and a discredit to the splendid traditions of organized medicine.

To anyone who has watched the trend of political affairs, it is quite evident that a day of trial for the medical profession is at hand. Only by maintaining our high standards of professional character can we promote the stimulus which will excite the rank and file of our profession to present a solid front to the enemies which seek to debase our standards. Our industrial friends cannot escape by enacting one rule for insurance work and another for civil. The majority of our members have registered dissatisfaction with present conditions and delay in securing relief is only occasioned by lack of concert and State-wide consultation to decide what shall be the remedy for this deplorable condition.

To this end, an exact definition of measures to protect the rights of all are enumerated and repeated to refresh the minds of everyone concerned:

1. Each County Unit should select or nominate the men competent to do this work, general practitioners, surgeons and consultants. This group should include the men definitely used by insurance companies and should be controlled by a committee whose function is to pass on qualifications and protect physicians and carriers alike. The incompetent should be removed and remain removed until proven otherwise. This takes the control of our practice from insurance companies and insurance doctors and places it where it rightly belongs, namely, with the medical profession.

2. The privilege should be accorded every injured individual or his employer to call his personal surgeon, provided he is on the County Unit list of industrial surgeons.

3. The State Society should secure the enforce-

ments of the intention of the law that the privileges of the Industrial Act should be limited to individuals of moderate income.

4. The State Society and its component units should have fair and unbiased interpretation of the law from its own legal staff, and where the rights of our memberships are not protected, should take the proper steps to secure legislative amendments.

5. No member should undertake this work for less than the fee schedule nor accept employment with any firms indulging in this pernicious practice.

6. No member should employ on salary men who are not members of the County Society. Applications pending should be considered as membership.

7. Officers of the Society and County Units known as representing insurance companies should be made to understand a proper appreciation of the delicacy of their positions and prevented from using them for the material benefit of themselves or their companies.

8. All the rules of courtesy and ethics that have heretofore applied to the practice of medicine and surgery should hereinafter also apply to the daily life of industrial surgeons.

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ACUTE LYMPHATIC LEUKEMIA WITH SPECIAL REFERENCE TO THROAT CONDITIONS—REPORT OF A CASE

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Acute lymphatic leukemia is a disease not fully understood.

Hewlett in "Monographic Medicine,"¹ defines it as follows: "A diffuse, unrestrained growth of the tissues that give rise to the white blood cells. The disease is really in the blood-forming organs, and lasts from one to nine weeks." A very indefinite definition.

The chronic form, with its anemia, glandular changes and characteristic blood findings, is not often overlooked, but the acute type, which runs its course with speed and extreme virulence, simulating or complicating other and more common diseases, is rare and more apt to be passed over.

The literature is scant on this subject. Most of the reported cases seem to be complicated with some other affection.

Monroe² reports a case simulating meningitis, and Samson³ reports one complicated with noma in a child where the symptoms of leukemia disappeared during the onset of the noma, but later returned.

The etiology is uncertain. Two theories are possible:

1. Malignancy, based on the fact that in this disease we assume an unrestrained growth of certain cells in the body, but differing from the ordinary neoplasm in the fact that there seems to be no one definite focus. The pathology includes all the tissues concerned with the formation of white blood cells.

2. Infection, supported by the fact that the progress of the disease, with high fever, prostration and hemorrhagic tendencies, is similar to other diseases of infective origin. The nature of the infection, if such be the case, has not been discovered. However, Ellerman and Bong⁴ have succeeded in transmitting chicken leukemia to normal fowls, and they note the interesting fact that some of the animals inoculated developed the myeloid form, while others showed the lymphatic type. They consider the cause a filterable virus. Ziegler and Jochmann⁵ report several cases due to tonsil infection, and Hausemann suggests that many of its manifestations resemble those of severe diphtheria and other septic diseases.

The symptoms are usually well defined. The onset is fairly sudden, often starting with a chill, followed by fever, which soon becomes high and of a septic nature. The throat frequently shows evidence of early active inflammation, to such an extent that the case may be easily mistaken for a severe tonsillitis or peritonsillar abscess. Stomatitis is common. Hemorrhage from the gums, into the bladder and other areas, often occurs. The cervical glands enlarge early in the disease, but the swelling is not extreme. The spleen may not even be palpable, also no evidence of disease may be found in the long bones. Anemia and prostration are always present. Cardiac weakness comes on early, and the disease is invariably fatal in from a few days to a few weeks.

The diagnosis hinges on the blood picture which quickly develops, rapid changes taking place daily. Without the blood-cell relationship, the diagnosis is difficult and often impossible. Acute miliary tuberculosis, acute pyemia, acute follicular tonsillitis, acute peritonsillar abscess and, in fact, any acute inflammatory disease may be easily mistaken for acute leukemia, especially those diseases having a severe throat infection.

Examination of the blood gives the diagnosis at once, and while the leucocytosis is increasing by leaps and bounds, the change in the character and relationship of the white cells is one of the earliest features, and cannot fail to call one's attention to the nature of the disease. As has been said, more mistakes occur by not making a thorough examination than by not knowing, and this is especially true in the diagnosis of this disease. Blood counts show a leucocytosis running to 500,000 or over per cu. mm. with large and small lymphocytes above 80 per cent. In the lymphatic type myelocytes are rarely present, and polymorphonuclears are less than 5 per cent. Transitional cells are common, so much so that it has been suggested that the different types of leukemia may be but varieties or different stages of the same disease.

Treatment of any kind is only palliative, for, as Greene⁷ says, "the disease is invariably fatal in a very brief time." Cases of the sub-acute and chronic type have been treated with Fowler's solution, benzol, X-rays and radium, and removal of the spleen in Banti's disease with but slightly better results.

Case No. 6684. J. O. The patient, a male, age twenty, had been apparently well up to one week previous, when he complained of sore throat. He had a small ulcer on his tongue, which he had been treating with a gargle. Family history was good. Past history, noted the usual childhood diseases, but nothing of importance for past ten years, except attacks of tonsillitis twice a year. Present examination showed patient fairly well nourished, but of sallow complexion and pale, and with very large, cryptic tonsils. Temperature, 104°. Pulse, 120. Right cervical glands somewhat swollen and tender. Glands elsewhere negative. Spleen not palpable. Lungs, heart and abdomen negative. Reflexes normal. Considerable blood was oozing from the throat, and the patient could open his mouth with difficulty. Tonsils were enlarged and right peritonsillar region swollen and hemorrhagic, with dark purpuric areas extending well over the vault, and out along the gums. The physician in charge had been in attendance the past two days, and stated that the throat looked typical of a peritonsillar abscess. He so diagnosed and, acting on this assumption, had incised deeply in the region of the swelling, but got no pus. He then, to make sure, probed at different angles, feeling that with this kind of throat and temperature pus must be present somewhere in the locality, but found none. The following day hemorrhagic areas developed, and the bleeding from the incision continued fairly profuse. After two days of continuous bleeding, we saw the case in consultation. In spite of loss of blood and high temperature, the boy said he felt good and was hungry. However, he looked very sick.

Our diagnosis of acute leukemia was made on the laboratory findings. Hemoglobin, 68 per cent. Erythrocytes, 2,760,000. Leucocytes, 33,800. Small lymphocytes, 26½ per cent. Large lymphocytes, 67 per cent. Polymorphonuclears, 1 per cent. Transitions, 5½ per cent. Later the same day the white count went to 38,000, the percentages remaining about the same. By the following morning the white count was 125,000 with large and small leucocytes together, 94 per cent, polymorphonuclears, 1 per cent, and transitions, 5 per cent.

Realizing the hopelessness of the situation, yet anxious to check the hemorrhage, we gave 1 cc. of hemoplastin intravenously. In a few hours the bleeding from the throat incision stopped, but later the same day epistaxis began and the urine was quite red in color. This condition was partially controlled by a second injection of hemoplastin, but the pulse became faster and weaker, and the second day the patient died.

CONCLUSIONS

1. Acute lymphatic leukemia, while a rare disease, must not be overlooked when considering severe throat conditions.

2. The laboratory is absolutely essential in differentiating the various blood diseases, and though the case looks simple, unless emergency demands immediate action, the best practice calls for the taking of clotting time and complete blood and urine tests before any diagnosis is made, and especially before any surgical procedure of the throat or anywhere else is decided upon.

1. Hewlett—Monographic Medicine, Vol. I, p. 617.
2. Monroe—Journal A. M. A., Vol. 74, No. 9, p. 603.
3. Samson—Berl. Klin. Noch., Feb. 3, 1908.
4. Ellermann (V) Untersuchungen Über das Voins der Bünnerleukämia. Z. Behr. f. Klin. Med., 1914, LXXIX, 43.
5. Ziegler and Jochmann—Deut. Med. Woch., XXXIII, No. 19.
6. Hausemann—Berl. Klin. Woch., Jan. 5, 1914.
7. Greene—Medical Diagnosis, p. 157.

PRECANCEROUS LESIONS OF THE UTERUS.

By WM. G. MOORE, M. D., San Francisco.

The unsatisfactory results of any type of treatment of well-defined carcinoma of the cervix emphasizes the need of early recognition and treatment of all conditions which would appear to favor the development of cancer of the cervix or uterine wall. Why is it that cancer of the cervix in the multipara is more common than that of the body, while in the nullipara cancer of the body predominates?

In 412 cases reported by Sampson, 97 per cent had been pregnant. In 334 cases collected by Williams, 96 per cent had been married and nearly all had borne children. Cullen reports forty-nine out of fifty who were married and had borne children.

If, as we believe, it is due to trauma and irritation, cannot we lessen the number by early correction of this condition?

The term "precancerous," first suggested by Orth, has arisen from the fact that there is no sharp histologic line of demarcation between benign and malignant tissues, but that there are often border-line cases upon which competent pathologists will disagree.

The pathologist uses it as a term descriptive of histological elements in a given piece of tissue; the clinician often applies it rather loosely to such things as appear to be contributory factors in cancer causation, such as lacerations, erosions, polyps, inflammation, and other types of irritative lesions (Taylor) which characterizes the types of uteri most apt to develop cancer.

In this paper the term "precancerous" will be used in the stricter sense of the pathologist, which does not mean that the precancerous lesion is the cause of cancer or is early cancer, but simply that such lesions become cancer sooner or later in the majority of cases.

The earliest possible diagnosis is, of course, the utmost importance and at present a most fruitful field of endeavor, because a knowledge of the beginnings of cancer and its precursors will equip us with a knowledge of prophylactic measures which are always more effective than curative measures in the control of a terrible disease.

In the first place, all do not agree that there are conditions which can properly be termed "precancerous." It is contended (Rubin quoting Van Hausemann and Pick) that a case has developed to that stage when it permits of diagnosis, or it has not, and therefore in the latter instance the carcinoma cannot be identified. These difficulties (Eden) have led observers to endeavor to define conditions which, while not definitely malignant, yet show such a tendency to end in malignancy that they may be regarded as half-way houses. Such conditions, if they could be detected, would rightly be called "precancerous."

It is obvious that, histologically considered, carcinoma must have a beginning (Rubin). The pathologist, like the clinician, is not prepared to make a diagnosis until some amount of destructive capacity is manifested either grossly or his-

tologically. Routine examination of all material, suspected and otherwise, would open up the possibilities of acquiring the necessary material for the study of the earlier phases of cancer formation.

The greatest practical difficulty arises in deciding upon what criteria the diagnosis, especially as regards malignancy, shall be based. What shall we regard as metaplastic non-malignant epithelial changes and what shall we regard as atypical epithelial which will sooner or later develop into cancer? Unless this point can be definitely determined, it is evident that we can never hope to improve our prophylactic therapy for cancer.

Cancer, then, is an evolutionary process requiring time to show its actively destructive process. Precancerous lesions, as a rule, pass very slowly into cancer. For example, leukoplakia of the mouth and bladder have been known to exist for years before showing areas of malignant degeneration (Hall-Marchand-Cabot-Bloodgood). Ewing says: "It is not true that a pathological condition must be either cancer or not cancer. It may be neither the one or the other. It may be in the process of becoming cancer."

Precancerous lesions have been described in nearly every region of the body where cancer occurs, especially the lip, mouth, skin, bladder and to some extent the uterus. One cannot help but be convinced of the actual occurrence of such lesions in organs after reading such articles as Ewing's, Buerger's, Marchand's, Cabot's, Davis', Hall's, Marion's, Bloodgood's and many others.

Carcinoma may be placed in two large groups as regards etiology (Ewing). Those in one group have been so placed because it has been observed that the cells of even the smallest established carcinoma appear to be entirely separate from the normal tissues and to differ essentially from those phases of atypical hypertrophy or inflammatory overgrowths which accompany other types of carcinoma. These well-established observations have led Ribbert to assert that the cells of carcinoma are isolated throughout their entire course, and hence the cells of origin must be isolated. This author has also affirmed that no one has ever seen the beginning of carcinoma of the breast, all true cancers of this organ being so well differentiated that the attempt to trace the neoplastic from the normal cell invariably fails. A careful study of 475 cases by Kilgore appears to bear this out. The comprehensive list of tissue abnormalities, as catalogued by Williams, Meyer and others, has established on a very broad basis the theory of Cohnheim that tumors develop from misplaced and embryonal cell groups which have never enjoyed a normal structure. In all this group of cases, the origin of cancer is from congenitally misplaced or abnormal cells, and not from transformed normal cells. Precancerous cannot be used in connection with this group of carcinomas.

In the other very extensive group the evidence points to the origin of carcinoma from previously normal adult cells which pass through a series of changes induced by chronic irritation and

terminating in carcinoma. This class of tumors belongs to the so-called "Irritation Group," and the preliminary cell changes have been called pre-cancerous lesions, as already defined. Clinical observation and morphological study have long indicated that the majority of important tumors are not dependent on congenital abnormalities in tissue structure, but arise from once normal but previously altered tissues, and that various forms of chronic inflammation and irritation are observed to precede the appearance of most tumors.

A careful review of the work of Hall, Cabot, Davis, Marion, Marchand, Weir, Berkeley and Bonny, Sweeny and Bloodgood in regard to skin cancer, cancer of the mouth, of the bladder, and vulva should be sufficient to convince the most skeptical in the pre-cancerous lesion as a definite entity and urge us to further effort for evidence of such lesions in the uterus.

The lesions of the cervix uteri which have been most commonly designated or suspected as being pre-cancerous are:

(1) Cervical erosions, (2) lacerations, (3) chronic endocervicitis, (4) chronic hypertrophy, (5) leuoplakia, (6) senile changes, (7) polypi, (8) metaplasia, (9) glandular hypertrophy, (10) submucous fibromata.

The alteration in structure which precedes the definite development of carcinoma of the cervix have been variously interpreted. Schauenstein, Sitzenfrey and Schottlander describe as characteristics of beginning carcinoma the following changes:

1. The appearance of groups of irregular hypertrophied epithelial cells with hyperchromatic nuclei, with irregularity and indistinctness of cell borders.
2. Loss of regular stratification of cell layers, especially of the proliferating basal cells (Schottlander). He also emphasizes the importance of marked nuclear granulations.

The significance of these changes is contested. Huerlin and Pick interpret them as atypical hypertrophy and regeneration. Yet if to the above criteria are added:

3. Downward growth of epithelial papillae and definite heteropia, there is little doubt that one has to deal with the early stages of carcinoma. Bloodgood emphasizes the breaking through of the basal layer of cells and lymphoid reaction about the papillae. Rubin pictures extremely early but quite definite proliferation of atypical cylindrical and squamous cells on the surface and in the glands of old erosions, and the routine study of such erosions reveals many phases of such pre-cancerous lesions. It need not be assumed that every case presenting the above changes will necessarily develop cancer, focal epidermization often remaining stationary; but it is highly important to recognize that the majority of cervical cancers develop from such altered cells. When atypical hyperchromatic and hypertrophied cells are growing downward from the epidermis or fill enlarged gland alveoli, the diagnosis of beginning carcinoma is justified.

Ewing lists as histological criteria in the diagnosis of cancer the following:

1. Cellular overgrowth passing beyond that observed in other processes affecting the same tissue.
2. Atypical qualities of the cells, metaplasia, anaplasia.
3. Loss of polarity.
4. Heteropia.
5. Desoplastic properties.
6. Local invasive properties.
7. Metastases.

Many interesting specimens of early epithelial proliferations have been found in the routine microscopic examinations of all tissues removed at operations in the Gynecologic Clinic of the University of California Medical School. These range from simple epithelial proliferation, possibly as a result of inflammatory changes, to microscopic areas which show mitotic figures and invasion of the basement membrane and adjacent structures by new-formed cells.

THE VALUE OF BASAL METABOLISM ESTIMATIONS IN CASES WITH LOWERED METABOLISM *

By R. B. HILL, M. D., Los Angeles.

We are learning more and more that the ductless glands of the body control many of its functions by their specific activities. The physical and mental development of the individual are dependent on their action and interaction. Nutrition of the body, of the mind and of the sex organs is dependent on the trophic stimuli of the endocrine system. These glands are concerned with the body growth long before their trophic relation is evidenced by the development of the secondary sex characteristics.

It has been known for years that the secretions of the ductless glands have been intimately related to the metabolism of the body. However, it has been only within the past few years that they have received the study that their importance justifies. Such interest has been aroused chiefly through the clinical application of the results of purely scientific studies and the devising of methods of study which could be used by the clinician. The determination of the basal metabolic rate has become a necessary factor in diagnostic medicine, and the value of this procedure in aiding in the determination of the activity of the endocrines is rapidly becoming recognized.

While the action of all of the internal secretions upon metabolism is not entirely clear, it has been definitely established that one controlling factor in the regulation of basal metabolism is thyroxin, on which the functional activity of the thyroid gland is largely, if not altogether, dependent. So characteristic of thyroid diseases are changes in basal metabolism that its determination is accepted as an index to the activity of that gland, provided, of course, that other diseases which bear upon metabolism are excluded.

While the determination of the basal metabolic

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

rate furnishes reliable proof for or against the under or over-activity of the thyroid gland, and it is not necessary to depend entirely upon the hormonal signs and symptoms, the physical characteristics do play a most important role in the diagnosis.

The thyroid has been called the "gland of energy." "It speeds up and activates all the functions and organs." The patient suffering from hypothyroidism lacks energy, is dull, has a tendency to melancholia and has a poor memory. There are changes in the skin and hair, the patient looks old; there is enlargement of the abdomen and a tendency to become stout. Mucoid edema of the subcutaneous tissues and an atherosomatous change in the aorta are sometimes found. There is a diminution in perspiration, a moderate degree of anemia and the genital functions are diminished; digestion is altered. Thyroid inhibits the islets of the pancreas, therefore in cases of decreased thyroid activity the power to assimilate carbohydrates is increased.

Peristalsis and intestinal secretion are influenced to a certain extent by thyroid secretion, so that many digestive annoyances are associated with thyroid affections. An altered relation in the secretion of the thyroid and pituitary may, owing to their relation to the pancreas and liver, markedly influence the sugar tolerance and bear a close connection to diabetes.

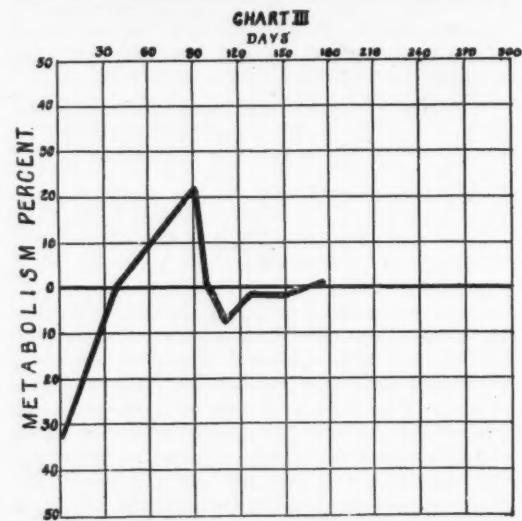
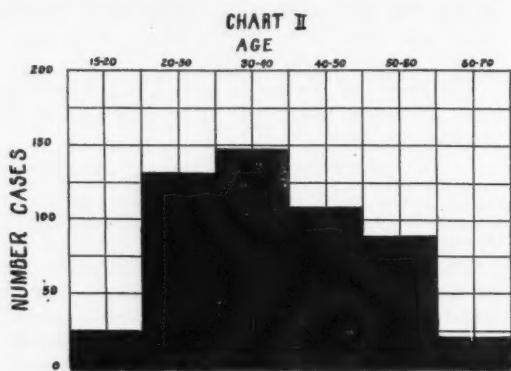
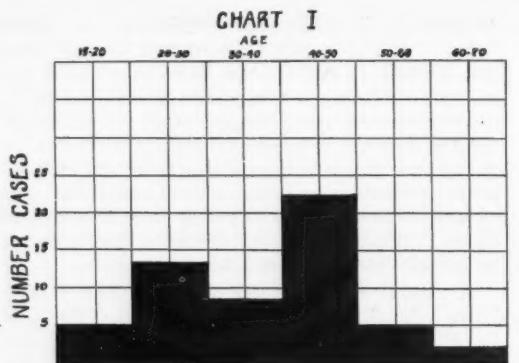
The thyroid, aside from its many stimulating and protective functions, is distinctly a sex gland. During the period of menopause there is a normal waning of ovarian function, with which there should be a gradual diminution of thyroid activity. Since every ductless gland is affected by the underactivity or the overactivity of any of the other glands, the instability of gland function, so particularly marked in the female, can readily be accounted for. This is shown from the fact that diseases of the thyroid are from six to ten times more frequent in women than in men. The entire co-ordination between the glands is often upset at the menopause, hence at this time we frequently see nervous disturbances in the female.

When the nervous and digestive symptoms of thyroid disorders, the associated mental upsets, the metabolic changes and physical and mental lack of tone and energy are considered, it is evident that in this type and numerous milder forms there may be included many cases suffering from hypothyroidism which in the past were diagnosed as hysteria or neurasthenia.

An analysis of the outstanding signs and symptoms, together with basal metabolic readings of a series of 54 cases, in which the basal metabolism readings were low, is presented. In many of the cases a diagnosis was definitely established and in others clinical diagnoses confirmed by an estimation of the oxygen consumption.

Of these 54 cases, 48 were females and 6 males. Five were between the ages of 15-20, thirteen between 20-30, seven between 30-40, twenty-two between 40-50, five between 50-60, and two between 60-70.

Chart I illustrates graphically the ages in



which such derangements are most common. It will be seen that the greatest number occurred between the ages of 40-50, or the menopause age, and the next largest number between the ages of 20-30, or the period when glandular stability is being established.

As these cases all occurred in a large general office practice, it was thought that the disproportion of the cases between the ages of 40-50 might be accounted for by the fact that the greatest

number of all patients registering were between those ages.

Chart II, prepared from a survey of the ages of 540 consecutive cases, shows that the peak is reached between the ages of 30-40.

The estimations were made with a Benedict respiration apparatus and the arbitrary figure of minus 10 taken as the lower limit of normal. It has seemed to me that the wide range ordinarily accepted for the normal reading is too great when the estimations are well controlled, as most of our normal readings do not vary more than 5 per cent.

The readings in the 54 cases varied between minus 13 and minus 47, the average being minus 20.2 before treatment was instituted; the average reading following the administration of thyroid extract, thyroid extract and ovarian extract, and, in some, ovarian extract alone was minus 4.4.

The chief complaints of forty-eight of the patients were nervousness, exhaustion and no ambition, indefinite symptoms which might be due to a variety of causes, the most common probably being syphilis and tuberculosis. There was no evidence of tuberculosis or syphilis in any of the cases physically. The radiological and serological examinations were negative. The typical appearance of the advanced myxedema patient was not present in any of the cases. Fourteen complained of a rapid heart, and fifteen of a rapid gain in weight. The thyroid gland was definitely enlarged in fourteen; three of these complained of palpitation. The pulse was slow in forty. The average systolic blood pressure was 125; the average diastolic pressure 74.

Following the administration of glandular therapy twelve of the cases were apparently well, thirty-eight improved and four unimproved. Of the four unimproved, three were epileptics and one a case of paralysis agitans. The average time necessary to bring the metabolism readings to normal was three weeks. Undoubtedly, many classed as improved will eventually be entirely well, as it is sometimes difficult to establish the dosage of the glandular extracts necessary for a particular patient. To accomplish this, it is necessary to follow the clinical course closely and make frequent basal metabolism readings.

Chart III shows the basal metabolic curve of a patient who was given thyroid extract and did not report for observation again for seven weeks, when there were marked symptoms of hyperthyroidism and the basal metabolism reading was plus 23.

The study of the present group of cases has impressed me with the relative frequency of the condition and the marked improvement that can be attained by the administration of some of the glandular extracts in selected cases. While it would seem to be unwise to become too enthusiastic over what seem to be satisfactory results in complaints of this kind until the cases have been observed over a long period of time, the results are presented for what interest they may have.

RESTORATION OF FUNCTION IN ACQUIRED HAND DEFORMITIES *

By A. GOTTLIEB, M. D., and L. I. NEWMAN, M. D., San Francisco, Cal.

From the latest report of the Industrial Accident Commission of California¹ we have extracted figures to demonstrate the "total" number of industrial accidents in the state and the average disability in days; the number of cases of all permanently disabled and their average disability in days for which compensation had to be paid to the employes; and we have compiled figures from the same source to show the frequency of "hand" injuries and deformities and the resulting losses in time, function and compensation payments. Comparing the figures for the "total" with those for the "hand," we learn that hand injuries, not counting the hand deformities which are secondary to arm and forearm lesions, form 30.3 per cent of the total number of industrial accidents, and that the average loss of working days is 2.8 times greater for the hand than for all injuries combined. The reason for this state of affairs is to be sought in the fact that the hand is the most needed tool for the performance of work and that, notwithstanding accident prevention measures, it frequently gets caught in the working machine; further that no workman can return to his occupation unless the wound has healed and at least minimum function has returned, which accounts for the large number of lost working days.

From the figures of the report given under the heading "loss of function" it has been calculated that in a number of cases the hand represents 65.3 per cent of the "total." This high percentage of hand cases with loss of function can only be accounted for by the neglect of early preventive physiotherapy in the acute stage of the injury because of the wrong conception deeply rooted in the medical profession that functional restoration is the object of aftertreatment with physical remedies and can be entrusted to the masseur or the reconstruction aid.

The comparative low figures in days, i. e. 214.2 for the "hand" against 352.1 for the "total" (chart 1) during which temporary compensation has been paid, is explained by the multiple cases, 783, of low percentage, 1-10, of impairment (chart 2). Under this column are classed the cases which have resulted from the minutest injuries, cuts and bruises, to the more severe which, however, return to work within not over forty weeks.

The economic loss sustained by industry through hand injuries is enormous but uncertain of calculation, because it involves so large a number of workmen of various vocations which are thrown out of work for a considerable length of time during which they are not sick enough to be hospitalized and not well enough to be useful. This type of injured are not only forced to idleness but are exposed to moral degradation and frequently to compensation neurosis as well.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Chart 1. From Table XV of the Report.¹

Location of injury	No. of cases	—Total—		—Loss of function—	
		Aver. disability in days	No. of cases	Aver. disability in days	No. of cases
All	57,991	39.3	1,955	352.1	
Hands	17,580	413.9	1,276	214.2	

Chart 2. From Table XVI of the Report.¹

Permanent disabilities and Total cases	Loss of use	Percentage of impairment of earning capacity, etc.					
		1-10	11-20	21-30	31-40	41-50	
All	1,741	757	938	365	224	84	53
Hands	1,068	321	783	152	69	33	19

Preventive physiotherapy: In the acute stage of the injury, physiotherapy is a prophylaxis against muscular atrophy, adhesions of tendons, stiffness of joints and the development of trophic changes. No time should be lost in its application by regarding physical measures as an object of aftertreatment; it should be practiced by the attending surgeon or under his strict directions as a supplement to the surgical or orthopedic therapy. The surgeon, however, must be acquainted with the various agencies and know their indications. Only by an intelligent application of physical remedies in the acute stage will the number of minor impairments, 1-10 per cent, which swell the figures given under "loss of function" on chart 2, be considerably reduced.

Physiotherapy in fully developed cases: A detailed description of the methods to restore function to acquired hand deformities has been fully outlined in an article by one of the writers² and need no repetition here. It should only be remembered that the less time is lost from the union of severed tissues until the patient is submitted to physical treatment, the quicker and better will function be restored and the reverse. The truth of this statement is obvious if one fixes in mind the objects of physiotherapy in acquired deformities, which are: to increase circulation, to soften and stretch contracted tissue, to loosen scars and re-establish elasticity in ligaments, to regain lost muscle power and restore motion to joints of the wrist and fingers by gradually breaking up the articular and periarticular adhesions; and if one recalls the theory concerning the transformation of muscles, tendons, ligaments and other connective tissues as advanced by Riedinger,³ which teaches that in the course of time after injury the

tissues on the concave side of the deformity shorten and thicken, while on the convex side they lengthen and attenuate. The more time is allowed for this tissue transformation the more pronounced and resistant will the deformity become and functional restoration be the more tedious and time consuming.

To confirm the above considerations about physiotherapy, fifteen cases have been selected at random from the files of the State Compensation Insurance Fund and tabulated on chart 3 to demonstrate its necessity in restoring function to the damaged hands and to procure actual savings in compensation.

All cases presented bear witness to the fact that functional restoration has been obtained from about 40 to 100 per cent. Whenever the treatment was instituted early, as in the cases 6, 7, 8, 9, 10, 12 and 15, functional gain was at a maximum and the savings proportionately large; while the delay of treatment up to three months after the injury, as in cases 1, 2 and 5, resulted in a lower functional improvement and in less financial saving. The value of physiotherapy at any event is obvious from the cases 3, 11, 13 and 14, which presented time lost since the injury in excess of three months and required a high percentage of disability rating; notwithstanding these unfavorable conditions the cases have improved in function from 40 to 100 per cent and have resulted in equivalent financial savings in compensation.

The case 4, an exception to the rule, represents money lost instead of saved, because after five months of physical therapy the rating in money was not reduced, on the contrary the amount was augmented by the expense of the treatment and by the payment of temporary compensation during the same. The treatment, however, has restored the man from practical helplessness to a fair usefulness in his earning capacity before his final discharge.

Summary: The stated facts leave no doubt that physiotherapy should be administered early after the injuries, by orthopedists welltrained in physiotherapy, or under their supervision, in order to obtain the highest degree of functional and economic returns; and that no case should be regarded closed and submitted for final rating until the

Case No.	Preliminary Rating Per cent	Rating Amount	Time since injury	Physiotherapy Length of treatment	Final Rating Per cent	Amount	Expenses for Physioth.	Temp. Comp.	Savings
1. 35	35	\$3000.00	3 months	6 months	17.5	\$1500.00	\$180.00	\$510.00	\$ 810.00
2. 32 1/4	32 1/4	2500.00	3 "	6 "	18	1340.00	300.00	460.00	400.00
3. 30	2500.00	3.5 "	3 "	3 "	0	—	65.00	250.00	2185.00
4. 69	69	5000.00	2.5 "	5 "	69	5000.00	132.00	425.00	*557.00
5. 60	60	5000.00	3.25 "	5 "	20	1700.00	125.00	510.00	2675.00
6. 8	8	442.00	2 "	11 days	0	—	30.80	143.00	268.00
7. 15	15	840.00	1 month	6 weeks	0	—	50.00	168.00	622.00
8. 16 1/2	16 1/2	924.00	4 days	7 months	0	—	108.00	420.00	396.00
9. 10	10	800.00	2 weeks	6 "	0	—	95.00	170.00	635.00
10. 35	35	2000.00	1 month	2.5 "	6	350.00	70.00	200.00	1380.00
11. 20	20	1000.00	6 months	2 "	0	—	37.00	200.00	762.00
12. 17	17	1000.00	3 weeks	6 weeks	6.2	685.00	46.00	90.00	579.00
13. 16	16	1400.00	4 months	2 months	10.3	\$895.00	65.00	180.00	260.00
14. 15	15	715.50	5 "	4 "	7.3	365.50	110.00	176.00	53.50
15. 24 1/4	24 1/4	1863.00	3 weeks	6 weeks	1	76.00	60.00	114.00	1613.00

* Loss.

expert opinion of a reconstructive physiotherapist has been obtained concerning the possibilities of improving the deformity by further treatment with physical measures.

References:

1. Report of the Industrial Accident Commission of the State of California from July 1 to June 30, 1920. Pages 108-110.
2. Deformities of the hand acquired after accidents. Dr. A. Gottlieb. Calif. State Journ. of Med., 1921, XIX, 72.
3. Anbildung und Schwund oder Erhaltung der Substanz und der Funktion. J. Riedinger. Centralblatt der Chir., 1897, No. 10,273.

THE IMPORTANCE OF THE VEGETATIVE SYSTEMS, NERVOUS AND ENDOCRIN TO CLINICAL MEDICINE*

By F. M. POTTENGER, A. M., M. D., LL. D., F. A. C. P., Monrovia, Calif.

It is unnecessary to emphasize before a group of neurologists that the study of the nervous system furnishes the basis for understanding the clinical manifestations of disease. It is necessary, however, to emphasize that neurology as a specialty, as practiced in the past, largely left out of account that branch of the subject which is of greatest importance to general medicine, and consisted too much of recognizing hopeless organic nervous diseases, localizing cord and brain lesions, and diagnosing and differentiating various forms of mental diseases. By thus limiting the field, neurology has so far withheld from itself the honor which rightly belongs to it of being the foundation structure through which disease expresses itself, and has offered little inspiration or help to the student of general medicine. This, however, is now in the process of change, and with this change there is developing an interest in disturbances in that portion of the nervous system which presides over organic function; and, in those forms of mental distress which accompany every disease and which of themselves produce many symptoms. These are commonly found in the every-day practice of medicine and are amenable to treatment. I refer to altered relationship in the vegetative nervous system and to psychopathologic states with their many functional disturbances.

This broader field comprises a study of the physiologic control of the organism; the nervous system, both voluntary and vegetative, and the system of endocrin glands. It further comprises a study, on the one hand, of the manner in which these systems are affected by psychical as well as physical stimuli, and, on the other hand, of the manner in which the physical and psychical systems are affected by nervous and endocrin stimuli.

In the developmental stage of what we are pleased to term modern medicine, through which we are now passing, laboratory study and specialization have dominated the field. There has been a tendency to magnify the importance of certain lines of study and to minimize others; to magnify the part at the expense of the whole. There has been too much of a tendency to treat special branches of medicine as entities apart from the

general subject. This idea has been further fostered by the prevailing tendency to consider the disease apart from the patient.

The error of this attitude has been gradually forcing itself upon the leading thinkers in all specialties, with the result that they are beginning to realize that their special subjects are only minor branches of the whole, and the importance of general medicine is again being emphasized as it has not been since the dawn of specialization. No group of physicians should be able better to understand the disintegrating influence of specialization and the harmful effects of illogically developing the study of parts and systems apart from the whole, than neurologists, for their study leads them more than any other group of specialists to study the patient and his reactions and to an investigation of those structures of the body which control normal activity and through which abnormal activity is expressed. No other group of men should appreciate so fully the unity of the human organism and the incompleteness of the grasp of present-day medicine which has so exalted the study of disease and which has attempted to divide diseases into those of this and that organ or system. No disease is limited to a given organ or system. Every disease affecting the human body should be looked upon as a disease of the whole organism. The general action may not be evident in some of the minor maladies; yet there can be no pathologic process so slight that it does not affect nerve or endocrin control, and through these exert an influence upon other parts of the body.

As the body is a unit, so should medicine be a unit; and diseases should be studied with reference to their effect upon the body as a whole. Neurologists are the only members of our profession who have been giving the major portion of their time to the study of the patient's reactions during the era now passing, in which the disease and disease process has been emphasized in contradistinction to the patient. The neurologist has studied the nervous and psychic side of the patient, but unfortunately instead of recognizing the broadness of this study and the manner in which it underlies the entire study of medicine, he has in much the same manner as the gastroenterologist, the heart, the lung, the ear and eye specialist, developd his subject in its narrow aspects and not in its relationship to medicine as a whole.

It is now time for neurology and psychopathology to be enlarged and studied in their broadest aspects. What this broad aspect is, can be appreciated best by considering man as a physiologically functioning organism which is obliged to adapt itself to a physical and social environment. If this organism could develop normally and thereafter always remain in a favorable environment and be spared harmful stimuli, there would be no physical disease and no pathologic psychical states. But such is not the case. Along with the continuous flow of normal sensory stimuli which reaches the higher centers over the peripheral sensory nerves, the reaction to which makes the normal man, there come also many harmful stimuli, some of which arise from definite disease-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

producing factors such as micro-organisms, others that result from abnormal strength of normal stimuli. Some of these are sufficiently strong to disturb normal adjustments, causing functional disturbances and producing the condition which we recognize as disease.

Disease declares itself by symptoms, that is, by disturbed function. So long as function is unimpaired a disease process is making no impression on the physiologic activity of the organ. We can conceive of disease processes being present, yet failing to cause recognizable symptoms. In such instances the nerves are capable of withstanding the stimuli produced by the pathologic process and of still performing their function normally, or the process expresses itself in symptoms which we fail to recognize.

This we see in some of the minor maladies, and also at times in many of the more serious chronic diseases. There comes a time in many of the latter when we speak of an arrestment of the clinical activity, although the pathologic process is not removed. This is illustrated in such diseases as tuberculosis, malaria and syphilis. The patient may be free from the usually recognized symptoms, although the disease is not healed.

In medicine, because of the dominance of pathologic anatomy over pathologic physiology, we have caused much confusion by dividing diseases into organic and functional. We have assumed the attitude that functional diseases are unworthy of scientific attention. But now, just when this opinion is well established, we have learned that our judgment was wrong and that diseases express themselves in disturbed function, known as symptoms, and that disturbances in function are of importance to the organism, whether they are caused directly by a disease process in the organ affected, or are expressions of disturbed nerve balance, the origin of which is in some distant structure, or are produced by psychic unbalance.

Symptoms according to medical teaching are divided into two classes, subjective and objective. Those of the latter group are often called signs, which confuses and might suggest that they are caused differently. The former are noticed by the patient himself, and the latter are recognized by the observer. They are all disturbances in function and should be classed as symptoms, no matter how observed. A rapid pulse, a high blood pressure, a lagging chest wall, a disturbed innervation in the larynx, a dilated pupil are just as much symptoms as pain, malaise, cough, dyspnoea, heartburn, deafness, and disturbed vision. These are, one and all, produced by a disturbance in the normal physiologic activity of the tissues or organs affected.

In the past our efforts have had the effect of confusing instead of clarifying these disturbed relationships. Particularly has this been true in the symptomatology of visceral disease. We have looked upon symptoms as entities, when, instead they should be considered as disturbances in the normal working of the human machine. Symptoms do not necessarily belong to the organ or part in which they are expressed. Hilton, in that

great contribution to medicine, "Rest and Pain," recognized this fact with reference to visceral pain. He says: "When a patient is suffering from pain in any part, he is instinctively inclined to believe that he must also be suffering from inflammation in that part. Pain, as we all know, is not by itself an indication of an inflammatory state, nor is redness, nor is swelling; for any or all of these may coexist without local inflammation"; again: "Pain in any part, when not associated with increase of temperature, must be looked upon as caused by an exalted sensitiveness of the nerves of the part, and as a pain depending upon a cause situated remotely from the part where it is felt." And further: "I would ask you to regard them (pains) as resulting from some direct nervous communication passing between the part where the pains are expressed and the real and remotely situated cause of the pain."

This quotation from Hilton expresses the essence of symptoms of visceral disease—a disease expresses itself not only anatomically but physiologically. In fact, there are certain syndromes which are recognized as diseases, such as hay fever, and asthma, which have no known pathologic anatomic basis. This same is true of the functional disturbances which are caused by psychopathologic states. I know of no disease, however, which does not have a pathologic physiologic basis. The physiologic expression is the one of greatest importance to the patient. A grasp of this conception removes high and low blood pressure from diseases of the circulatory system, and places them in general medicine. It shows that most of the symptoms on the part of the gastrointestinal canal do not arise in the canal itself, but in structures which are reflexly connected with it. It removes most diseases which are expressed by pain in the chest and abdominal wall from the surface of the body to underlying viscera. The same may be said of the secretory disturbances of the various important organs of the body, in fact, of all disturbed function. A disturbed function of an organ calls for a knowledge of the nerve connections of that organ and an understanding of what local and general causes may be operating to influence its nerve supply. All of this requires a grasp of the body as a whole and emphasizes the fact of the unity of the human organism and likewise the unity of the study of its diseases—the unity of medicine. Every important disease should be studied in its pathologic anatomic, pathologic biochemical, pathologic physiologic and psycho-pathologic aspects.

Nerve relationships, endocrin secretions and their actions, the effect of the discharge of physical and psychical stimuli during health must be studied intently by the neurophysiologist until they are understood and made the common property of the medical profession. To this end neurophysiology must be earnestly studied. It offers a promising field for the best minds in medicine today. When this has been accomplished, the task of interpreting the pathologic reactions in the presence of disease will be greatly facilitated and medicine will be stripped of much of its con-

fusion and mysticism. It is to the neurologist and the psychopathologist that we look for guidance in this important field of medical research.

Neurology in this broadened sense will assert itself as the basis upon which the future structure of medicine may be constructed, in which all the parts as represented by the many specialties today will take their place and be molded into the unified whole.

Hilton, John: "Rest and Pain," 1913, Twelfth Edition, p. 70 and 71, G. Bell & Sons, Ltd., London.

THE ETIOLOGY OF PARENCHYMATOUS NEPHRITIS

By GEORGE E. EBRIGHT, M. D., Assistant Professor of Clinical Medicine, University of California Medical School.

A consideration of the etiology of acute and chronic nephritis presupposes a definition of the term nephritis, and here one is confronted with evasions, contradictions and confusion. Twenty years ago a definition¹ of nephritis was "An acute inflammation of the kidneys, more or less diffuse in nature. It may be either of a mild, severe or grave character." This definition was acceptable at that time for the lack of a better one, but the conception of nephritis as a disease is undergoing modification. Herrick² says: "By the term nephritis is meant an inflammation of the kidneys. As it is commonly employed, a non-suppurative inflammation is implied." Rose³ says: "Nephritis is usually defined as an inflammation of the kidneys, although it may be admitted that many of the conditions included under this heading might be more correctly described as due to a toxic action on the renal element." Christian⁴ reflects a more modern conception and implies an acceptance of Rose Bradford's toxic theory of nephritis in his definition, which is, "Nephritis is a diffuse, progressive, degenerative or proliferative lesion, involving renal parenchyma, or interstitial tissue, or both." I believe we should now go a step further and say that acute nephritis is a general disease of a toxic nature which, as a rule, involves the kidneys, but does not necessarily do so. Franke⁵ describes acute nephritis without albuminuria or acute functional disturbances of the kidneys and without casts or albumen in urine associated with a soft painless rapidly progressing general edema and edema of the lungs without evidences of cardiac failure. The following case from my records may be considered also illustrative of this contention.

A woman, 22 years of age, in excellent general health, suffered an attack of acute follicular tonsilitis which lasted four or five days. Two weeks later she awakened one morning with general edema, more pronounced in the face and eyelids, and to a less extent the entire body. There was decided diminution in urinary excretion. The urine showed a specific gravity of 1026, no albumen, no casts. There were no retinal or cardiac

alterations; headache was very severe. She was treated as if she were suffering from acute nephritis by rest in bed and rigid milk diet. Diuresis was established the following day; specific gravity of the urine was 1010, no albumen, no casts. The third day there was a very faint trace of albumen, but no casts. The fourth and fifth days, a very faint trace of albumen and a few hyaline casts were present. By the eighth day, the urinary findings were entirely normal and the edema had entirely disappeared.

It is to be noted in this case that the kidneys did not show clinical evidence of disease at the height of her period of general edema. When first seen the history of very severe headaches, pronounced general acute edema, anuria and history of acute tonsilitis two weeks before presented the usual clinical picture of a moderately severe acute nephritis except that the urine showed no albumen or casts. It is difficult to conceive that the toxic symptoms of acute nephritis are due to the kidney lesion. However, a distinction must be made between the symptoms of acute nephritis, as in the general acceptance of the term, and the manifestations of uræmia. Such evidences of an intoxication in acute nephritis as headache, edema, retinal hemorrhage, may undoubtedly be considered to be due to some toxic substance, generally of bacterial origin, or due to poisoning by inorganic chemical substances, such as mercuric chloride. Uræmia is a fairly well defined entity, which is dependent upon a reduction of the functioning power of the kidneys. Uræmic symptoms associated with advanced destruction of kidney substance are very different from the symptoms marking an acute parenchymatous nephritis except where great involvement of the kidney tissue results in interference with renal function. The chief manifestation of acute nephritis is edema. If edema were due to failure of kidney function, then in all cases in which destruction of the kidney substance is present, edema should occur, which, however, is not the case. As is well known, if the kidneys of a dog are removed the animal dies of uræmia without edema. Patients die of chronic interstitial nephritis and of chronic diffuse nephritis without edema. An illustrative case is as follows:

J. A. C., male, 29 years old; on February 1 vomited several times and immediately thereafter suffered three severe uræmic convulsions followed by coma, recovering consciousness twelve hours later. As far as he knew, his health up to that day had been excellent. Between that time and April 28, he had had two vomiting spells and headache, but no other indications of ill-health. Upon examination, four months after his convulsions, he felt entirely well, but was passing three liters of urine a day, had lost twenty-seven pounds in weight. The urine was of low specific gravity, 1010; 0.4 per cent albumin, numerous hyaline casts and red blood corpuscles. There was pronounced anaemia—haemoglobin, 54 per cent, red cells, 3,220,000. His phthalein output was less than 5 per cent for two hours. There was hypertrophy of the left ventricle; blood pressure was 190 systolic, 100 diastolic.

(To be concluded in October.)

MANIFESTATIONS OF LESIONS IN THE POSTERIOR URETHRA.

By LOUIS CLIVE JACOBS, M. D., San Francisco.

Chronic urethritis, with prostatitis and the so-styled sexual neuroses, are two important types of lesions, with symptoms referable to the posterior urethra. These patients are usually referred to the urologist. The so-called sexual neurotic type of patient is the one that deserves the greatest consideration. The majority complain of a tickling sensation at the end of the penis, a feeling of discomfort over the bladder, pain along the urethra, burning on urination, painful ejaculations, dull pain in the testes and shooting pains in some part of the sexual apparatus. There may be uncomfortable sensations, which the patient himself cannot analyze. Although they may have a healthy appearance, these patients undoubtedly are suffering mental anguish and attach great importance to their symptomatology.

These patients should be cystourethroscoped, because a majority of them show pathology in the posterior urethra, which is particularly amenable to the proper treatment.

The late improvements upon the electrically lighted urethral instruments have enabled us to make more satisfactory examinations than have been made heretofore. The most practical instrument for this work is the McCarthy Cystourethroscope, although it is occasionally necessary to resort to the late model Buerger urethroscope. These modern instruments have been the result of the growing interests that have manifested themselves in the last ten years to thoroughly investigate all urological cases, so that at the present day the technic has been so improved that we are enabled to diagnose and treat conditions that heretofore were neglected.

The embryological and histological development of the posterior urethra have been thoroughly studied, various sections of the urethra made and the close intimacy of the small urethral and sub-cervical glands have been recorded. Wherever glandular tissue be present we are apt to find pathological changes in these glands, which take the form of infections, cysts, polyp formations, hypertrophies, ulcerations, edemas and new growths. The verumontanum, which is an important factor in all these chronic infections, is essentially a glandular structure, which is present at all ages. A verumontanitis is often associated with a chronic prostatitis, and vesiculitis, and an examination shows infiltrations of the mucosa of the posterior urethra, with gaping ducts of the follicles present in this area. It is, therefore, evident that the only means of making a correct pathological diagnosis is by use of the cystourethroscope.

The therapeutic results obtained in the majority of these cases by the utilization of the fulgurating current are very satisfactory. Fulguration, which has given such beneficial results in many lesions at the neck of the bladder, has remedied the pathology and symptomatology found in these cases.

A perusal of the literature shows some very good articles, with reports of case histories, in the various urological journals; but the majority of the textbooks give this subject scant consideration.

In the examination of both my office and hospital cases a record of the posterior urethra has been made with pencil sketches, and in order to perpetuate these interesting pathological pictures I have transferred them by means of modeling compound to permanent models. These wax models are duplications of the actual lesions as they appear to the cystoscopic eye.

Following are the case histories and plates of the models of these cases (of twelve patients), which are typical and illustrative of posterior urethral pathology:

Model No. 1, Mr. H. L., age 19; no venereal history; denies ever having had sexual intercourse, but gives a history of excessive masturbation, which is the probable etiological factor; complains of nocturnal emissions every night. Examination shows a hypertrophy of the colliculus, with two ridges extending into the urethra. The utricle is located to one side of the verumontanum. This patient was twice fulgurated. On examination six months later, the urethra was normal and the symptomatology had disappeared.

Model No. 2, Mr. S. H., age 65, for the past six months had frequency, hematuria, loss of weight and cachexia. Urine on examination was cloudy, containing pus and blood. Cystoscopic picture showed a carcinoma in the bladder of the infiltrating type, with a metastasis in the posterior urethra. The growth was cauliflower in type, with a spreading base. The mucosa was highly congested and showed necrotic areas. The patient became bedridden and died several months later with a general carcinomatosis.

Model No. 3, Mr. H. R., age 32, had a urethral discharge for a number of months. The Wassermann was negative and smears were negative for gonococci. Prostatic secretion showed 5—6 pus cells to the field. Cystoscopic examination showed prominent ejaculatory orifices. There were a large number of cystic bodies, located on the wall, on one side the roof and floor of the posterior urethra. When fulgurated these cystic bodies "popped," the noise of which was quite audible to the patient. One fulguration failed to destroy all of the bodies, but they spontaneously disappeared. Re-examination several weeks later failed to show any of them. However, I continued to use the Kollman dilator, with excellent therapeutic results.

Model No. 4, Mr. F. B., was a man of over 50 years of age. He complained of some incontinence, particularly during the day. He denied gonorrhoea and lues; but the Wassermann was positive. The sphincter of the bladder was relaxed so that a sound passed very easily. Cystoscopically there were trabeculations on the upper bladder wall, with a relaxed sphincteric outlet, and a bulging in the median line. The posterior urethra showed thickened muscle bands with a prominent verumontanum.

Model No. 5, Mr. M. L., age 44, complained of burning at the end of urination. There was no frequency and no urethral discharge. He admitted having had a Neisserian infection when a boy, but denied lues. The Wassermann was negative. In the first and second glass test, the urines were clear. No stricture was detected with a F. 26 olive tipped bougie, and a F. 26 sound passed easily into the bladder. The prostate was not enlarged and not indurated. The vesicles on palpation were normal. Prostatic secretion showed a few pus cells to the field. Endoscopy was negative. Cystourethroscopy revealed a large cyst

ORIGINAL WAX MODELS

By LOUIS CLIVE JACOBS, M. D.



ILLUSTRATING LESIONS OF POSTERIOR URETHRA



located on the summit of a large and highly congested verumontanum. This I fulgurated and could hear a "pop" similar to that in the previous history. I lost track of this patient and do not know whether the removal of the cyst and the further fulguration of the verumontanum cured the symptomatology.

Model No. 6, Mr. C. L., was a young man with pulmonary tuberculosis. He complained of a tender swelling in the left testicle, which was about as large as a tennis ball in size. He denied venereal infection, and the Wassermann was negative. Cystourethroscopic examination revealed an ulcer of the T. B. type surrounding the left ejaculatory orifice.

Model No. 7, Mr. H. J., complained of sexual weakness, with extreme fatigue after attempted intercourse and some burning on urination. There was no evidence of venereal infection either from the history or the examination. Examination showed a papilloma, a polyp, an old abscess cavity and marked striations in the post montem space.

Model No. 8, was a sufferer from chronic gonorrhea and had been treated by sounds and other instrumentations. Examination showed a large number of trabeculations and scalloping of the floor of the urethra. The prostatic sinuses were well dilated. Desquamated epithelium was to be seen and a flocculent membrane was clinging to the ducts. Most of the picture I consider due to injudicious treatment; and improved most decidedly upon fulguration.

Model No. 9, shows a diverticulum of a posterior urethra. I saw this case cystoscopically on two different occasions. A double cavity, of an interconnecting type was present in the posterior urethra. A catheter was passed into the cavity, but it did not penetrate any great distance.

Model No. 10, shows a verumontanum that had evidently been previously treated with strong applications of silver nitrate or other irritants. The upper surface seems to be detached and raised above the balance of the tissue. It is of a lighter color and the fulgurating wire passed between it and the surrounding tissues.

Model No. 11, shows a foreign body imbedded on a hypertrophied portion of the verumontanum.

Model No. 12, is that of a large broad verumontanum, with prominent anterior and posterior ridges. The tissues form three projections which bulge into the posterior urethra. These projections were more or less cystic and readily responded to fulguration.

CONCLUSIONS

(1) Most of the cases with a chronic genito-urinary symptomatology, which previously have been classed as neuroses, have definite pathological findings in the posterior urethra.

(2) All such cases should be cystourethro-scoped.

(3) The faithful use of the cystourethroscope not only reveals the pathology, but indicates the most successful method of treatment.

(4) Wax models of the posterior urethral pathology visualize the conditions involved and improve our technic.

(5) These cases receive the most benefit from fulguration.

FURTHER STUDIES ON THE NATURE OF FEVER*

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The purpose of this paper is to present additional experimental evidence in support of the

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physicochemical theory that in the ordinary febrile diseases such as pneumonia, typhoid, tuberculosis and others, the symptom, fever, is due to a deficit of free water in the body resulting from an abnormal tendency on the part of the colloids of the body to bind water. This theory was advanced by Balcar, Sansum and Woodyatt following a series of experiments with sugar and salt fevers. They found that fever could be made to come and go at will by the alternate, intravenous administration of strong sugar solutions, and water. They reported that fevers as high as 111° to 115° F. could be produced by this method and in one instance the fever rose to 125.6° F. This is the highest animal temperature on record.

They produced the same type of high fevers by the intravenous administration of strong salt-solutions, thus proving that such fevers were not due to an abnormally high combustion of glucose. The same types of fever were produced in poikilothermic dogs in a similar manner, thus eliminating the influence of the hypothetical, heat-regulatory center in the brain. In these experiments the free water was removed from the body in varying degrees by the dehydrating effect of the sugar and salt solutions. From these experiments and the clinical evidence that there is an abnormal binding of water in the ordinary febrile diseases it appeared that the same fundamental principle was involved, and that such fevers should be materially influenced by the copious administration of water. This proved to be the case.

Severe pneumonia cases, and numerous influenza cases through two severe epidemics were treated by the copious administration of water. Sufficient water was used to keep the urine constantly straw-colored and of low specific gravity. This frequently required eight litres of fluid per day. Excellent clinical results followed. In these two series of influenza cases the author had no deaths. When the cases were seen at the onset, the fever never became alarmingly high and rarely lasted longer than 24 to 36 hours. The periods of convalescence were short. In cases seen some time after onset with high fever, 105° to 106° F., and usually a bronchopneumonia, such fevers were reduced in the course of a few hours to safer levels ranging from 99° to 102° F. and maintained at such levels without difficulty throughout the course of the disease.

The discussions which arose following the reporting of this work centered about the acceptance of this proposed physicochemical theory of fever, as opposed to the accepted heat center theories. Barbour says, "Without the brain there is apparently no infectious fever, and unless the water loss from the blood be extreme, as in Woodyatt's sugar dehydration, the nervous mechanism is undoubtedly involved in the production of fever." In the same article, however, he says, "The recognition of water as the central factor in the regulation of body heat may lend coherence to the following review of some of the many-sided investigations of the past decade." It was generally agreed, that, in so far as the experimental sugar and salt fevers were concerned, this physico-chemical theory was acceptable but that further

experimental work should be undertaken to ascertain whether all clinical fevers should be explained on this basis.

A search was therefore made for substances that would produce a fever simulating as closely as possible the clinical types. After unsuccessful attempts with egg white and diphtheria toxin it was found that three hourly 1 cc. intravenous injections of commercial typhoid-paratyphoid vaccine would universally produce from three to four degrees of fever. Poikilothermic dogs were prepared as previously described, i. e., the dog was narcotized with ether and the spinal cord severed between the sixth and seventh cervical vertebrae. Immediately following the operation, the animal was swathed in cotton. This covering was then adjusted to establish a balance between the heat produced and the heat lost. Under such conditions the temperature can be made to remain constant for hours. In the most conclusive experiments the temperature was maintained as nearly normal as possible, so that a rise of three degrees would amount to true fever rather than a simple rise of temperature. When an even plateau of temperature had been established three hourly 1 cc. doses of typhoid-paratyphoid vaccine were given intravenously. In all of the experiments of this series, the temperature rose as it did in the sugar and salt fevers produced in poikilothermic dogs.

EXPERIMENT NO. I. CHART NO. I.

Large female collie, weight 16.6 Kg. The vaginal temperature at 10 a. m. was 102.6° F. The dog was narcotized with ether and the spinal cord severed between the sixth and seventh cervical vertebrae. The wound was closed with drain and linen sutures. The animal was swathed to the extent of approximately three-fourths of the body surface in a two-inch layer of cotton. The temperature gradually fell in the course of the next three hours to 99° F. Additional covering was added and the temperature rose in the next two hours to 100.2°, where it remained practically constant for the next four hours with no further changes in the extent of the covering. The variation was 0.4°. Three hourly 1 cc. doses of typhoid-paratyphoid vaccine were given intravenously. In the course of five hours the temperature rose to 102.8° F., a rise of 2.6° F. During the whole experiment the dog was very quiet. At 10:50 p. m. the dog developed irregular breathing and died at 11:05, five minutes after the taking of the last recorded temperature, with a very slight tonic convulsion. In this experiment the rise in temperature following the administration of the vaccine was 2.6° F., but the final temperature was but 0.2° F. above the initial temperature. In subsequent experiments the temperature was not permitted to drop so low. This was accomplished by shortening the time of operation and having ready a previously prepared cotton jacket.

EXPERIMENT NO. II. CHART NO. II.

Young female collie, weight about 10 Kg. The same general procedure was followed as described above. The vaginal temperature before operation was 102° F. It fell after operation to 100.2° but rose to approximately 101°, where it remained

constant for the next hour. Variation 0.3° F. Three 1 cc. intravenous doses of typhoid-paratyphoid vaccine were given as before. In the course of four hours the temperature rose to 104.3° F., a rise of 3° F. During the next three hours this temperature declined to 102.2°. In this experiment the plateau of constant temperature was not maintained for as long a period as in the previous experiment.

EXPERIMENT NO. III. CHART NO. III.

Small female terrier, weight 8 kg. The same general procedure was followed as described above. The original temperature was 102.5° F. Following section of the cord it fell to 101.3° F. and rose to 102.1° F. when the animal was swathed in cotton. The temperature remained at approximately this level for the next four hours. Variation .2° F. Three hourly doses of .1 cc. per kg. typhoid-paratyphoid vaccine were given and the temperature rose to 106° F. and then gradually declined.

EXPERIMENT NO. IV. CHART NO. IV.

Small female mongrel, weight 9.5 kg. This experiment differed from the previous ones only in that the dog was covered with the cotton jacket before the cord was severed. This successfully prevented any initial fall in temperature. There was a slight rise which necessitated the removal of a small portion of the covering. No other adjustments were made in the covering throughout the experiment. The initial temperature and that of the plateau was 101.8° F. Following the administration of the vaccine it rose to 105.4° F. and then gradually declined.

DISCUSSION

There are two theories of solution, the physical and the chemical. The physical theory of solution holds that substances like sugar or salt, when dissolved in water, form homogenous mixtures. The chemical theory of solution holds that such substances form hydrates with the water and thus bind it more or less firmly, depending upon the concentration of the substances in solution. Such water may be said to be "bound" as opposed to the term "free" water, the best example of which would be distilled water. It is in this sense that we have used the terms bound and free in these discussions of fever.

In the sugar and salt fevers these substances hydrate themselves at the expense of the free water of the body and either actually remove it from the body by diuresis or bind it within the body. In the ordinary febrile disease we have held that the poison of the diseases leads to changes in the cell colloids that increase their hydration capacities so that they tend to take up and bind more water. This may be due to changes in the oxidative processes preventing the oxidation going completely to the respirable carbon dioxide stage. We have assumed that an acidosis exists during the course of the fever, and this increase of hydrogen ion concentration of the tissues is the cause of their increased hydration capacities.

Whether or not this is the true explanation, we do know that there is an abnormal binding of water in febrile diseases. In a typical case of pneumonia for example the patient complains of thirst. The urine is scanty in amount and of high specific gravity. The patient rapidly gains weight. There is little or no visible perspiration. When the crisis comes the thirst disappears. Many litres of straw-colored urine are passed. The patient sweats profusely and the weight falls rapidly.

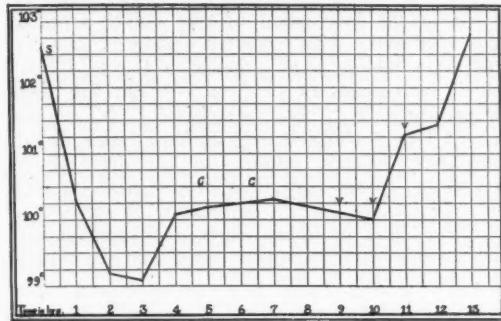


CHART No. I.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.

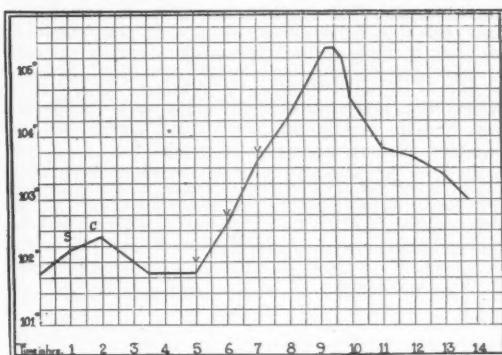


CHART No. IV.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.

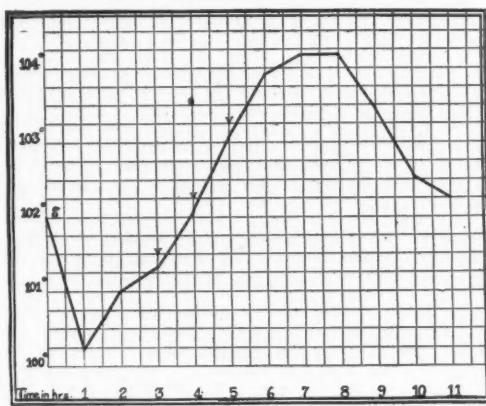


CHART No. II.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. V—Vaccine given intravenously.

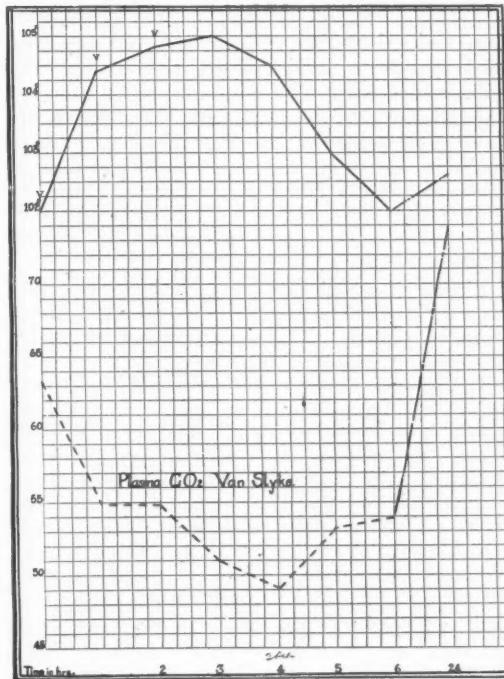


CHART No. V.

The acidosis of vaccine fever. V—Vaccine given intravenously.

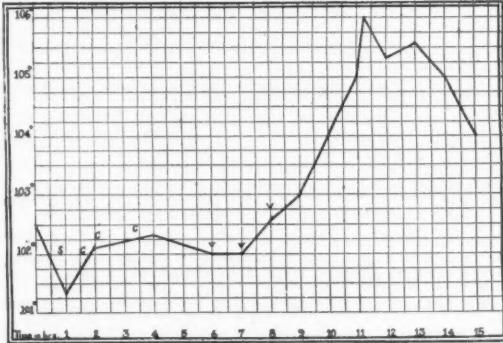


CHART No. III.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.

Barr and du Bois have studied a number of cases of Malaria in the Calorimeter. This study included the elimination of water. They state that ordinarily in afebrile conditions, the heat lost in evaporation of water constitutes about one-quarter of the heat eliminated; that it would appear, that there is in fever a disturbance in the power of the body to eliminate heat. They quote Ott's work in

which he found, that during the falling temperature in Malaria, there is a great increase in heat elimination and in the elimination of water without marked change in the heat production. They state, that in their observations on Malaria, a comparison of the heat of vaporization with the heat production gives variations of 10 to 45 per cent and, that a comparison of the heat of vaporization with the heat eliminated shows variations within the narrower limits of 23 to 36 per cent. These clinical and experimental observations on the binding and elimination of water during fever are easily explained with this physicochemical theory of fever.

The presence or absence of an acidosis during fever may be easily determined experimentally by

the Van Slyke method for determining the carbon dioxide capacity of the blood serum. It was found that three hourly doses of .1 cc. per kilogram of body weight of the typhoid-paratyphoid vaccine used in the former experiments produced a fever of three or more degrees in rabbits. Three such hourly doses of this vaccine were given to rabbits and hourly determinations of the carbon dioxide capacity of the blood plasma made.

In the first experiment the temperature rose from 102.2° F. to 106.2° F. in the course of three hours, and returned to 101° F. in the next four hours. The blood plasma binding power fell from 51.3 to 22.6 volumes per cent during the first four hours and rose to 35.4 volumes per cent at the close of the experiment.

CHART NO. V

In the second experiment, performed in a similar manner, the temperature rose from 102° F. to 105° F. in the first three hours and fell to 102° F. during the next three hours. The carbon dioxide binding power of the blood plasma fell from 63.3 to 49.2 volumes per cent during the first four hours and rose to 59.9 during the next two hours. On the following morning the temperature was 102.6° F. and the carbon dioxide binding power of the blood plasma was 73.9 volumes per cent.

Similar clinical observations on the alkali reserve have been made by Hachen and Isaacs in an epidemic of influenza and bronchopneumonia. They found that the alkali reserve as determined by the Van Slyke method falls as the temperature rises and returns toward normal when the temperature returns to normal.

Similar observations on the alkali reserve were made by Hirsch in a series of experimental infections in rabbits. The most virulent organisms produced the lowest alkali reserves.

Grulee and Boner recently described two cases of peculiar fever in infants. These infants were typical cases of malnutrition. The fever occurred during the periods of vomiting and while a thickened paste was given and disappeared either when fluids were given or when a liquid diet was resumed. In conclusion they say: "There occurs in infants who have been depleted by vomiting or rumination following the use of thickened paste feeding, a temperature curve which can most easily be explained on the basis of dehydration, though it is not possible absolutely to rule out absorption of bacteria as the cause, either total or partial, of this temperature. This temperature is unaccompanied by toxic or gastro-intestinal symptoms and there is evidence of a reduction in the water content of the blood during the febrile period."

It should be borne in mind that this study is on the nature of fever and not on the regulation of body temperature. We believe, however, that in the regulation of body temperature water must play a very important role.

Whether or not it would be advisable to attempt to reduce all temperatures to as low levels as possible, if it proves that this can be done, is another phase of the question which needs experimental verification. It has been argued that high fevers are protective and perhaps bactericidal in their action but no experimental

evidence has been offered. The instructions followed in the inoculation of the various types of agar agar media with suspected pathogenic material call for a cooling of this media to 45° to 40° C. which corresponds to 113° to 104° F. and these temperatures are not bactericidal. It is also argued that a temperature sufficiently high to kill pathogenic bacteria would also kill the cells of the body. In our clinical experience thus far with the elimination of or reduction of fevers in febrile diseases to safer levels, the complications have been less, the mortality lower, and the periods of convalescence shorter.

We realize that vaccine fevers are not identical with infectious fevers and that infectious fevers have not as yet been produced in poikilothermic animals, but see no reason why such fevers could not be produced provided the proper precautions were made to prevent too great a fall of body temperature in such animals. A study of this phase of the problem is now being undertaken.

CONCLUSIONS

These experiments show that experimental fevers closely simulating clinical fevers may be produced in poikilothermic dogs by the intravenous administration of typhoid-paratyphoid vaccine, thus eliminating in such fevers the influence of the central nervous system.

These experiments show that acidosis as determined by the Van Slyke method begins and increases with the increase of fever and decreases with the fall of fever.

These experiments furnish additional proof in support of the physicochemical theory that in the ordinary febrile diseases the symptom fever is due to a deficit of free water in the body resulting from an abnormal tendency on the part of the colloids of the body to bind water.

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BIOLOGICAL FACTS ABOUT BENZYL BENZOATE THERAPY*

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Notwithstanding the fact that benzyl benzoate has reached an unheard of popularity in our profession, and notwithstanding that it was accepted so unconditionally in this age of medical skepticism, one cannot help feeling that too little is known about this drug, aside from what we have been told by a few investigators, whose experiments concern themselves mainly with one physiological aspect, but whose end-results are contradictory. We do not know for sure to what factor benzyl benzoate owes its action, though

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Macht advanced a feasible hypothesis. Neither do we know how this substance is broken down in the human body, and we are still in the dark about its split and endproducts except for hippuric acid, which has been recovered in the urine. There must be other split products which might exert a harmful effect on the human machine under certain conditions before they are excreted. It seems that the enthusiasm of the man who introduced this substance completely diverted the medical mind from any dangers that might result from its thoughtless employment, and still there is no drug that does not bear watching. Benzyl benzoate therapy of today is rapidly drifting into empiricism, and if not saved by careful experimental and clinical observation it will soon fall into disrepute, although this substance may well have a place in modern therapeutics.

Let me briefly review the life history of benzyl benzoate as far as we are interested in it from the medical point of view. This substance has been used in the arts for many years, and its chemistry is well known. Time does not allow me to go into this phase except for the mere mention that it is an ester of a highly volatile structure which is easily oxidized, and for this reason unstable. It is soluble in alcohol among other substances, but not in water. Its relation to the benzoates and benzene is apparent from its name. The physiological action of both of these families is well known, though benzyl benzoate as such does not act like either one. Macht pointed out that the physiological action of benzyl benzoate is similar to that of papaverin, in other words that it belongs to the "anti-spasmodics," having an inhibitory effect on smooth muscle fibers. In the papaverin group, this faculty apparently depends upon the presence of a benzyl group, which is attached to an isoquinolin nucleus, since the separation of this group from its nucleus results in a loss of its anti-spasmodic faculty. Therefore, Macht thought that the inhibitory effect of benzyl benzoate was due to the presence of a similar benzyl group.

Macht's experiments led him to believe that the action of this drug was so generalized in its behavior that it would cope with almost any of the spastic disturbances of the involuntary muscle fibers of the animal body. In this he included all of the colics of the various organs, the lowering of the bloodpressure, and such conditions as bronchial spasms. He found that the bloodpressure was lowered by peripheral vaso-dilatation with only a negligible effect on the vaso-motor center. He concluded that the heart was not disturbed, and that respiration was only affected if very large doses were given, when the respiratory center would become paralyzed. Death of his laboratory animals was universally due to this fact. Still he did not lay special stress on this point, because the dose required to produce such a state was so much greater than that used in man. Macht realized, though, that certain animals can resist greater amounts of this drug than others. For instance, herbivorous animals will fare better than carnivorous animals, because the former have the faculty to metabolize benzyl compounds much

more rapidly, converting them into hippuric acid. Most of our experimental work of today is done on rabbits, and since they have this faculty, we must be careful in our conclusions as to dosage for man, and not consider ourselves safe when we use proportionately smaller doses. Up to now we have not learned yet what must be considered a large dose for man. It was the wide margin between the experimental and therapeutic dose that led Macht to state that benzyl benzoate was non-toxic for man. That such a reasoning does not always stand on firm ground was shown by the benzol investigations of various observers, who demonstrated that rabbits could be given large non-fatal doses in proportion to their weight, though man was found to be very much more susceptible to doses proportionately much smaller.

Macht's study remained unchallenged until November of last year, when Mason and Pieck described their findings in benzyl benzoate experiments with dogs. These investigators found that in dogs it would take very much larger doses than previously reported to obtain anti-spasmodic effects. In fact, if they succeeded at all in relieving such conditions as an artificially produced pyloro-spasm, the animal would die from respiratory paralysis. Mason and Pieck were doubtful as to the anti-spasmodic action in the intestine, spleen, kidney and uterus, because such very large doses were needed to obtain only a slight relaxation of the smooth musculature. Their failure to demonstrate bronchial dilatation, even after very large doses, is quite significant. Mason and Pieck were impressed with the marked depressing effect on the respiratory center as well as the marked fall in blood pressure. It is interesting that they noted a weakening action on the myocardium, which Macht had denied. This is well in line with some of our clinical observations. The contradictory findings sound the first warning to us, and until more evidence will be forthcoming, it will be well worth while to take into consideration Mason's and Pieck's findings, and not venture into giving large doses.

Until very recently, nothing had appeared in the literature on the effect of benzyl benzoate on the blood-forming mechanism and on the antibody formation. My attention was called to this phase soon after the introduction of benzyl benzoate, when I began to use it in carefully selected cases of spasmodic dysmenorrhea. The results were variable, and really spasmodic dysmenorrhoeas were rare. Therefore, I could not come to any definite opinion. Various preparations were used, and found to vary distinctly in their potency. Twenty per cent alcoholic solutions were found to deteriorate rapidly, and for this reason the pure substance was given in hermetically closed capsules. Ten minim doses were used three times a day, for a period of approximately eight to ten days overlapping the menstrual period. Late in 1919, while treating this type of dysmenorrhœa, I observed in two young women the recurrence of an appendicitis, which had been dormant for many years, and which I had considered a mere historical fact. Although, these experiences with two patients fell within a short time of each

other, the matter of appendicitis and benzyl benzoate therapy was then considered a coincidence in spite of the blood-count, which in both of these patients bordered on a leucopenia, contrary to what we usually see in a "flare up" of an old appendicitis. When within a few weeks a colleague reported a similar observation with the same blood findings, my curiosity was aroused, and it was decided to study the possible relation of benzyl benzoate in this matter.

On account of the unusual blood-picture, we naturally thought that benzyl benzoate might act somewhat like benzol, which is a known leucotoxin, and which lowers the defenses of the body by depressing the antibody formation. With the help of Mr. Jensen, one of our seniors, I undertook to study the relation of benzyl benzoate to the blood picture. We used rabbits, taking into consideration the unstable blood-picture of this animal. Each rabbit was carefully studied for several days until we had established sufficiently stationary base lines for the white blood cells. The detailed results of this study will appear shortly in the Journal of Pharmacology. I have prepared the following lantern-slides from the original charts, which are self-explanatory.

1. A daily dose similar in size to that used in man will cause first a steady leucocytosis, which tends to change into a mild leucopenia. This is accompanied by a relative increase in polymorphonuclear cells. If the dose is doubled, the whole phenomenon is shortened.

2. If one large dose is given, there occurs a diphasic curve, in which the rises are marked by a sharp increase in small lymphocytic cells. This animal developed snuffles after a few days, and as soon as this had subsided symptomatically, a double dose was given. The result was a sharp rise in leucocytes with a very high increase in lymphocytes, with a violent recurrence of snuffles. The recurrence of the snuffles immediately after the benzyl benzoate administration is very significant.

3. If a very large dose was given, the leucocytes failed to rise, but there occurred a leucopenia somewhat similar to that described for benzol.

4. If one would allow snuffles to subside until the blood-count had become stationary, and one would give then a large dose, snuffles would recur and be accompanied by terrific rises in leucocytes, in which the polymorphonuclear cells would be predominant. After each repeated dose the rise in leucocytes would be accompanied by a greater outbreak in snuffles with lymphocytes rising steadily until they outnumbered the polymorphs.

5. If one would take an animal, which had symptomatically recovered from snuffles, and give daily increasing doses of benzyl benzoate, beginning with a very small dose, snuffles would return and become more severe each day until the animal was overcome by the disease. The gradual rise in lymphocytes until near death, when the polymorphs predominated, is present here also.

6. That the manner in which the drug was given did not influence the blood-picture, was proven by giving to one animal the substance in

oil by stomach tube; to another, an equal dose in alcohol in the same way; and to a third, the same dose by subcutaneous injection.

From these results we concluded that benzyl benzoate has a definite influence on the composition of the blood-picture in the rabbit, which finding should be of sufficient value to investigate man from a similar point of view. We also provisionally accepted that the administration of benzyl benzoate to rabbits would favor the recrudescence of latent or quiescent infections. In other words, that it had a tendency to interfere with antibody formation.

With this latter fact in mind, Miss Leonard and I set to work to collect data regarding the actual influence of this drug on antibody formation. We chose the rabbit for the sake of comparison, and decided to use the hemolytic antibody for our working basis. Rabbits again were carefully selected and observed. We then immunized them with goat's blood, by intravenous injections at short intervals. The following lantern-slides will give some of our results clearly.

1. A very small dose of benzyl benzoate given several days before the period of immunization has very little effect on the production of antibodies, especially if the animal is allowed to rest every seventh day. This dose, though being in actual proportion to that used in man, is really insignificant to the rabbit, which can metabolize these compounds so very readily.

2. If the animal is immunized first, and the antibody formation is allowed to become very active, and then a small dose is administered daily, the antibody curve is at once depressed and ends abruptly, sooner than normal.

3. If immunization and benzyl benzoate administration are begun simultaneously, the antibody curve fails to rise to any height, and falls slowly to a low, insignificant level, which also disappears in a shorter time than normal.

4. If one begins to give large doses simultaneously with the beginning of immunization, the antibody curve is not only depressed but latent, and perhaps shortened. One might object to the large dose used in the latter experiment, but considering the faculty of the rabbit to break down benzyl compounds so easily, the dosage is not so very excessive. From further experiments we have received the impression that benzyl benzoate in itself acts more likely qualitative than quantitative in effecting antibody formation.

From this phase of our investigation we permit ourselves to assume that benzyl benzoate has a depressing influence on the formation of hemolysins in rabbits. Coupling this finding to our previous observation, we think it justified to say that this substance has a depressing influence on other antibody formations in the rabbit. As far as the rabbit is concerned this would satisfactorily explain the recurrence of latent infections during prolonged benzyl benzoate administration.

For several months we have made observations on the influence of benzyl benzoate on the blood-picture in women, and we have collected some fifty or more cases. The results are so variable, and there are so many extraneous factors to be

considered, that a definite opinion cannot be given until more material has been collected. We are under the impression that very small doses, such as five minim three times a day for a few days, have no other effect than to raise the lymphocytes slightly. In ten minim doses, three times a day over a similar period, we have seen repeatedly mild leucocytoses followed by a drop below the normal, with the same shifting in the differential count as observed in smaller doses. We have not seen any justification for using larger doses and, therefore, refrain from an opinion at this time. So far, we have not been able to find any changes in blood pressures when these small doses are used, but our observations have been confined to primarily normal pressures, and those raised by some toxic influence caused by pregnancies.

In regard to the breaking down of benzyl benzoate, we have not been able to demonstrate, to our satisfaction, that phenol is a factor, although we surmised it. It was this substance which was found as the end-product of benzol, and which we thought might also be a factor in the breaking down of benzyl benzoate. Also this question we have to leave unanswered, but we are at work, and shall have something to say within a few months.

It has been a rather hurried review of known and new experimental facts I have outlined, and I do not wish to leave the impression, that because animal experimentation has brought out facts that seem to point toward some dangers in benzyl benzoate therapy that this substance is a hazardous drug for man in the amount that is used at the present time. Nevertheless, we have been confronted with a controversy as to its actual value as an anti-spasmodic when it is used in small doses. If larger doses will be needed in order to produce an anti-spasmodic action, we must consider the experimental proof that this substance paralyzes the respiratory center, lowers the blood pressure, weakens the myocardium, influences the blood-forming mechanism, and depresses antibody formation to a degree which allows latent infections to become active. Until further proof is forthcoming that these animal results are wrong, or that we do not have to fear such results in man, we must select our patients for benzyl benzoate therapy, with all these possibilities in mind, and keep our dosage within very narrow limits in order to avoid unforeseen disasters.

THE 1922 MEETING OF THE STATE SOCIETY

The fifty-first session of the State Society will be held in Yosemite National Park, Monday, Tuesday, Wednesday and Thursday, May 15 to 18, inclusive. The A. M. A. will be held during the corresponding days of the following week at St. Louis.

It will be feasible to attend the State meeting, leave Yosemite on Friday, and be in St. Louis for the A. M. A. without any loss of time.

Watch for the October Journal for news about the next convention.

THE PSYCHOPATHOLOGY OF SOMATIC DISEASE*

By CHARLES LEWIS ALLEN, M. D., Los Angeles, California.

The duty of the physician when he takes charge of a case of illness is not so much to name and classify the disease from which the patient is suffering, as to estimate the probable reaction of the latter to the underlying pathological process and to modify this, if possible, if it is excessive or inadequate, guiding the sufferer to recovery.

Not the least important of the reactions of the organism is that on the part of the nervous system, particularly in its most complicated functions, which are manifested in what we call mind.

No one doubts today that the seat of these functions is chiefly in the cells of the brain cortex, the neurons.

The intimate connection of the brain with all other organs and the sensitiveness of its neurons to elevation of temperature, interference with blood supply and the presence in their nutrient media of substances deleterious, or directly poisonous, as well as to reflex influences, such as pain, makes it impossible for it to remain uninfluenced in disease of other organs, even the most remote. Conversely the relation is reciprocal, the mental state exerting a profound influence upon the body functions, accelerating, retarding or inhibiting. The mental attitude with which disease is faced has an important bearing upon its course.

The mental reaction to various situations is largely determined by the original constitution and the subsequent training of the nervous system: the more uncontrolled the mind, the less its ability to withstand stresses of any sort, among them that of somatic disease. We see this illustrated every day in the large class of ill-adjusted people, for the most conspicuous of whom the characterization "psychopathic personalities" is entirely justified.

Mercier long ago declared that insanity was due to two factors, heredity and stress. The same idea has been recently developed by Adler in his study of the inferiority of organs as a factor in disease and the possibility of its psychic compensation.

The Freudian school traces the psychic manifestations of the neuroses and minor psychoses to hidden or repressed complexes, usually of a sexual nature, while for Sidis the natural and necessary "fear instinct," when uncontrolled or perverted, is at the bottom of a vast train of morbid manifestations which we bring under the psychoneuroses. Now what fear is more powerful than the fear of death? Strong enough is the fear of suffering, of permanent illness, of financial loss, etc. Fortunate indeed is the physician, if he can preserve in the patient a calm and hopeful outlook throughout his disease.

Most striking is the difference in the disease picture in the mentally normal and in the chronic demented class of the insane. The latter, having no minds to react, suffer the most painful injuries and pass through the severest illnesses without

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

apparent distress, and survive, where the sound-minded would inevitably succumb. Of such importance is the mental reaction in somatic disease.

Any illness is liable to disturb to some extent the cerebral reactions, and we expect more or less irritability, querulousness and demand for unnecessary attentions, or on the other hand indifference and apathy, in all sick people.

While we have no exact standard of mental normality, we are forced to adopt a relative standard, and any considerable variation from this we consider abnormal.

For the proper course of the intellectual processes, mental clearness is necessary above everything else.

Clouding of consciousness is the result, not only of toxic substances introduced from without, but as' confusion, stupor and coma is a feature in a large number of diseases. In only the mildest cases of typhoid fever does the patient maintain his mental clearness throughout, confusion, stupor and delirium from mild to furibund being of frequent occurrence in this and other infectious diseases.

Hallucinations and illusions may occur exceptionally in healthy people. In unstable, psychopathic individuals, they may be brought out by nervous excitement, pain, fever and metabolic disturbances, very readily by poisons from without, notably alcohol, either alone or combined with the foregoing. They are very rare in people previously temperate and mentally sound.

A certain degree of depression, or more rarely excitement, would seem not unnatural in somatic disease. In our County Hospital material, affective disturbances reaching a pathological degree are very infrequent, being confined mainly to those previously psychopathic.

It is evident that education, social condition and racial influences have an important influence in this connection. In the home, influences which tend to disturb the emotional balance are difficult to eliminate, and this furnishes one of the strongest arguments for hospital care. In cases essentially mental, home treatment is rarely feasible. In private hospitals the patients are mainly of a more educated class, having a clearer realization of illness and its possible results; also the question of expense rises up as a specter to affright them. The less educated and especially the races other than the Caucasian, are inclined to fatalism, accepting things as they come. To them there is no alternative to the hospital, and since a great majority of them find there cleanliness, comfort and attention to which they are strangers, a rest under such surroundings is not always disagreeable, especially when, under the workmen's compensation laws, their financial needs are not neglected. Surgical asepsis and control of pain have removed an important source of unrest, but in the nervous and erethistic this must still be dealt with. Clouding of consciousness, disturbance of attention and inability to comprehend at the time, will be followed by gaps in the memory. Sometimes these are filled in by confabulation. Notably is this so in Korsakow's syndrome, which is seen

in the hospital as well as in the asylum, and is not solely a product of alcoholism.

Looking over our records, it is at once evident that actual mental derangement is rare except in patients either previously insane, or so strongly predisposed that the disturbing effect of the disease pushes them over the line. In the lesser variations, sex and especially age, play an important part. In general the women are more restless and dissatisfied, more exacting, and more prone to depression and anxious states. Home is the natural habitat of woman, and she bears separation from it badly. In elderly patients the vital organs, especially the heart and kidneys are, as a rule, more or less impaired in their function and cannot meet an extra strain. The most sensitive organ, the brain, suffers in consequence.

In the surgical wards there is considerable difference between aseptic and pus cases. In the latter the factors of toxemia and high temperature make for mental disturbance. In our County Hospital patients dread of a proposed operation rarely seems to cause mental upset. Recovery from the anesthetic is usually prompt and mental confusion lasting over twenty-four hours is rare, except in elderly people, whose elimination is presumably defective. In some of these a prolonged period of confusion or delirium has been observed.

Diseases of the sexual organs in both sexes are apt to be the starting point for hypochondriacal ideas, upon which successful operation has often a good effect. In genito-urinary patients the work of the kidneys is often deficient and on account of resulting uremia, psychic disturbance is more frequent in this department than elsewhere.

Fractures in old people are often the exciting cause of a general breakdown in which the mental element may be more prominent than the physical.

The cachexia of malignant growths leads sometimes to confusion and delirium or to excited or depressed states.

With the exceptions noted the organ affected does not seem to make much difference.

We have long ceased to talk of a specific puerperal insanity. In the majority of cases, the business of reproduction only brings to the front an underlying predisposition or speeds up an already existing psychosis. Minor pathological variations are infrequent in the previously healthy on our obstetric service.

In the medical wards, typhoid fever and pneumonia are the infectious diseases in which, above all others, confusional and delirious states are encountered. The eruptive fevers are seen mainly in children and of late years have been mild, with no mental symptoms.

In the tuberculous, the realization of disease is often imperfect and optimism prevalent. The "spes phthisica" has long been proverbial, but depression is seen, too. In the terminal stage, hallucinatory confusional conditions are observed from time to time.

That in the genesis of certain mental states the heart plays an important part is evidenced in our everyday language. Heartache and heartbreak are not mere figures of speech. Abnormal sen-

sations arising from the region of this organ upset self-control and mental balance as nothing else does. Our heart cases are universally reported as anxious, restless and hard to control. This is not always proportional to the lesion, since functional cases often show great distress, while the carrier of the most serious valvular lesion may go along unconcerned until he one day drops dead. Nevertheless a role cannot be denied to the suggestive effect of the universal knowledge of the dependence of life upon the work of the heart. We have seen a few cases of actual psychosis, either of the hallucinatory confusional or of the manic type, in which the heart lesion seemed a direct cause.

The frequent combination of cardiac disease with renal inadequacy furnishes an additional noxa. One of the most frequent causes of psychic disturbance is arteriosclerosis and cardio-renal disease. Among our elderly chronic patients it is the cause par excellence.

Sensations arising from the abdominal cavity are also disturbing, especially to the predisposed. Our predecessors recognized this when they applied the name "hypochondriac" to the morbid fancies, so much our bane.

Our cases of organic lesion seem less troubled than the functional cases. These latter are largely psychoneurotics, or at least their near relatives.

Mental disturbances, both major and minor, occur in the anemias. Those observed have been of the type of confusion, sometimes with delirious episodes, and have usually been terminal conditions.

Diabetes terminates naturally in coma, a period of mental confusion and unrest sometimes preceding this. I have also observed cases of the manic or depressive type which have cleared up under treatment of the constitutional disease.

No patients are more fretful, exacting and given to intraspection, and hypochondriacal ideas than those having diseases of the nervous system.

The so-called functional nervous diseases, the psychoneuroses, are intertwined with every branch of medical practice. The discussion of their psychopathology has reached a vehemence unsurpassed and its literature is too enormous to be more than mentioned.

Many of the views advanced appear fanciful and their acceptance involves great credulity, but out of it all there seem gradually to be emerging some ideas of value in the practice of medicine.

The relation of the psychoneuroses to the psychoses is of the closest, their separation often difficult, sometimes impossible.

No chapter of medicine is more fascinating and none needs more careful working out than that of the glands of internal secretion. We have long known that deficiency of the thyroid secretion is followed by mental dullness as well as by the body defects of myxoedema and cretinism, while the mental instability, the excitability and feverish activity of the hyperthyroid patient may easily pass into a true psychosis, usually of delirious or manic type. The action of the other endocrine glands upon the psyche, formerly hardly

suspected, is just beginning to be seriously studied.

Appreciation of the relation between these organs and the long neglected vegetative nervous system and the influence of this combination upon all the processes of the body is a very recent matter, though many of the facts upon which present views are based have been known empirically for generations. With the affective side of mental life their relation is peculiarly intimate, though as to whether the influence emanating from the neuro-glandular system initiates the emotion, or whether the emotion is the primary, and through the nervous system, sets the appropriate glands in action is still under discussion. While the James-Lange theory has been rejected by the majority of psychologists, the newer studies in vegetative neurology have brought forward some facts in support of it. Be this as it may, it is safe to say that there is interaction.

The work of Pavlov on the digestive glands and his demonstration of his "unconditioned" and "conditioned" reflexes, has served as a stimulus to a large number of researches upon the internal secretions. In his "Bodily Changes in Pain, Hunger, Fear and Rage," Cannon has shown to what extent the adrenal secretion is influenced by strong emotions. It appears to play the role of activator in situations requiring sudden and violent effort, and was found greatly increased in rage and fear, emotions which would naturally be followed by fight or flight. For Cannon the bodily changes are not the cause, but the result of the emotion.

The conditioning of the reflexes by circumstances associated with a strong affective tone has been utilized by Rows to explain such psychopathological manifestations as morbid fears and obsessions. Example: A soldier returned from the front could ride in any other vehicle, but showed the greatest terror when a trolley car came along. On questioning him, it was brought out that the noise made by the trolley wheel on the wire threw him into a panic because it reminded him of the sound made by an approaching shell, whose explosion had buried him and killed several of his companions.

The familiar influence of association and suggestion may well be explained on similar grounds and careful investigation of the genesis of the hypochondriacal ideas expressed by our patients, may open the way for a rational and fruitful psychotherapy.

The present tendency is to regard the intellectual functions as made up of reflexes of a higher and more complicated character, the brain being the co-ordinating center for all those reflexes which have to do with the great primal end of maintaining life and perpetuating it by reproduction, with its many divisions, beginning with procurement of food, escape from danger and the satisfaction of the sexual instinct, passing through multitudinous subdivisions, the more numerous the more complicated conditions of life become.

When it is realized by all physicians that the brain is but one organ of the body, although the most differentiated, that intellect is not a thing

apart and mind only a collective name for the series of conditioned reflexes which enable us to fulfill the primal instinct, even in the evermore complicated relations between man and man, the foundation will be laid for a better understanding of deviations from health, be their symptoms somatic or psychic.

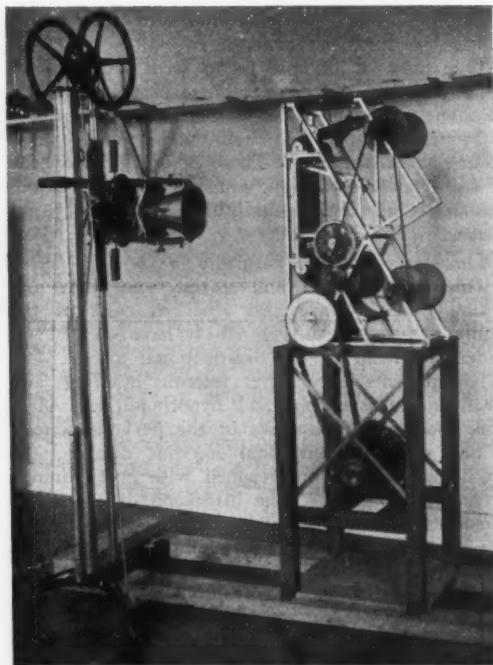
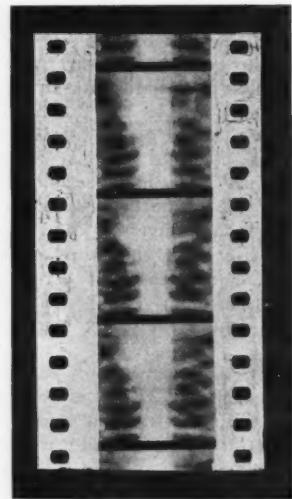
CARDIAC IRREGULARITIES

Illustration of Normal and Abnormal Mechanism of the Heart-Beat by Moving Pictures.
By WILLIAM J. KERR and H. E. RUGGLES, San Francisco, Cal.

The subject of irregularities of the heart remained more or less a mystery until graphic methods were introduced into experimental and clinical medicine. Since that time most of the irregularities have become well understood. It was formerly thought that variation in rhythm of the heart was due to damage by toxemia, or disease; but it is now definitely understood that one of the most common of the irregularities, the so-called "sinus arrhythmia," which is usually of the respiratory type, occurs mainly in young children and less frequently in adults, is of no serious consequence and does not indicate disease of the heart. The lack of understanding of this irregularity by some clinicians has been the cause of more misgivings on the part of the physician and the family than any other cardiovascular condition, unless it be the misinterpretation of the importance of certain of the so-called "functional murmurs" of the heart.

Since the introduction of the polygraph and the electrocardiograph the ordinary, or common varieties of irregularities, have become so well understood and so definitely manifested clinically that they have become easy to recognize without the aid of these precise methods. It is, however, imperative that anyone who attempts to interpret the cardiac irregularities without such aid should be familiar with the mechanism of the irregularities, as has been shown, both experimentally and clinically, by instrumental means.

However, there is a small group of irregularities which are rather rare and infrequent where we must rely upon the polygraph and the electrocardiograph for exact interpretation. By these I mean such unusual conditions as nodal rhythm, ventricular escape, block in the conduction system of the ventricles, or defective conduction in the terminal branches of the conduction system; many of the unusual tachycardias, such as true paroxysmal tachycardia and some of the unusual auricular flutters and auricular fibrillations. It was with the purpose of clarifying, in a clinical way, some of the more unusual conditions, and at the same time of confirming what we already know about the more common ones, that we thought of the possibility of utilizing the principles of the X-ray and the cinematograph. One of us has devised a motor-driven machine by which very rapid exposures of a moving X-ray film could be obtained of the human heart. The cinematograph-röntgen negatives, which may be obtained at the rate of fifteen to the second, show distinct differences from those obtained by the usual X-ray plates of the heart. By transposing to the cinematograph



film the cardiac cycle, or as many cardiac cycles as are desired, and by interpolation of duplicate negatives, the whole process of cardiac contraction can be so delayed on the screen that the detailed movement of the chambers may be possible of demonstration.

We have selected for demonstration three patients from the service of Dr. W. P. Lucas, Professor of Pediatrics, University of California Medical School, because the size of the film which we used was particularly adapted to the smaller hearts. One of the patients is that of a normal heart of a child recovering from a mild respira-

tory infection. The second patient is a boy of fourteen, who has chronic endocarditis involving the mitral valve, with considerable enlargement, and showing evidence of a moderate degree of delay in the conduction time from the auricle to the ventricle; the conduction time being between 5/25 and 6/25 of a second. The third patient is a boy of thirteen, who has chronic endocarditis involving both the mitral and aortic valves, with adhesive pericarditis, as well.

It was our purpose to study a few cases of alternation of the pulse to see if this condition could be better understood in a clinical way. The theories as to the cause of alternation of the pulse are divergent. Some contend that the alternation is due to sustained systole of the ventricle and to improper diastole resulting therefrom. Others maintain that it is due to a difference of excitability of muscle tissue, due to disease localized or scattered diffusely through the muscle. We were, however, unable to obtain any well-marked instances of alternation of the pulse at the time when our pictures were taken, but it is our intention to further develop this study along such lines.

The films should be of considerable educational value in the teaching of cardiovascular disease, particularly with reference to the irregularities, when the method has been finally perfected.

California Association of Medical Social Workers

The organization of the medical social workers of California has been completed by the council, in conformity to the requirements of the resolution passed by the House of Delegates at the Coronado meeting. The officers of the association and the executive committee are as follows: President, Dr. Louise Morrow; Vice-President, Miss Eleanor Stockton; Secretary-Treasurer, Miss Edna J. Shirpser. Executive Committee—Dr. Mary Harris, Dr. Louise Morrow, Miss Edna J. Shirpser, Miss Clara Saunders, Miss Marguerite A. Wales, Miss Josephine Abraham, Miss Eleanor Stockton.

CALIFORNIA ASSOCIATION OF MEDICAL SOCIAL WORKERS' PREAMBLE AND CONSTITUTION

PREAMBLE

For all the purposes of the California Association of Medical Social Workers, including its Preamble and Constitution, Medical Social Work is defined as social and similar technical work done by adequately trained workers in hospitals, dispensaries, offices, mercantile and industrial establishments, organizations, homes or elsewhere, under medical direction and control, as one of the agencies for the prevention and cure of disease.

Medical social workers, therefore, in the meaning of this organization, comprise the trained technical assistants to the members of the medical profession in the discharge of their duties in the prevention and treatment of disease, who subscribe to and are imbued with the same ethics, ideals and spirit of service that actuate the physician in the practice of the healing art.

As practical medical social work, as understood and practiced by members of this association, is an integral part of modern medicine, medical social workers should form an effective unit of the organized medical profession. It is, therefore, the

permanent purpose of this organization to become intimately identified with local, State and national organizations of the medical profession, devoted to improving the practice and progress of scientific medicine for the promotion and protection of the public health.

CONSTITUTION

ARTICLE I

Name

Section 1. The name of this Association shall be the California Association of Medical Social Workers.

ARTICLE II

Purposes

Section 1. The purposes of this Association are as described in the Preamble, which is hereby made a part of the Constitution.

Additional purposes are, to encourage and assist in the proper education of students in medical social work; to establish and maintain adequate standards in medical social work; to hold meetings, conferences and otherwise promote increased efficiency and mutual benefits for members of this organization.

ARTICLE III

Membership

Section 1. Members shall be active, associate and honorary.

Sec. 2. Any person who is actively engaged in medical social work, and who by education, personality, character and experience meets the minimum requirements effective at the time of application is eligible for active membership. The minimum educational requirement for members is, that they shall have graduated from a university, college or school accredited by the Advisory Council, giving training in social work, or furnish an equivalent satisfactory to the Executive Committee. In addition, they shall be engaged in the actual practice of medical social work under approved medical supervision. Personal qualifications and experience submitted are to be passed upon by the Executive Committee. Any active member ceasing to fulfill the requirements for eligibility shall retain active membership to the end of the year.

Sec. 3. Any member of the State Medical Society or any educator or scientist who is actively interested in and has contributed to the knowledge and practice of medical social work is eligible for associate membership.

Sec. 4. Physicians or medical social workers who have rendered distinguished service to the cause of medical social work may be elected honorary members by the Executive Committee. Honorary members shall have all the rights and privileges of the association, except the rights of voting and holding office.

Sec. 5. The name of an applicant for active membership, with such other data as is required hereunder and prescribed by the Executive Committee, shall be presented in writing to the Executive Committee by an active member. Election shall be by majority of the Executive Committee.

Sec. 6. Associate members shall be nominated and elected as are active members, except that honorary or associate members may submit nominations to the Executive Committee.

Sec. 7. All nominations for honorary membership shall be made in writing at least three months before the annual meeting. Honorary members may be elected only at the annual meeting by the active members of the association, and not more than two may be elected in any one year.

ARTICLE IV

Officers and Committees

Section 1. The officers of this Association shall be a President, Vice President and a Secretary-Treasurer, who shall be elected at the annual meeting. The terms of officers shall be one year.

Sec. 2. There shall be an Executive Committee of seven members, consisting of the President,

Vice President and Secretary-Treasurer of the association and four active members, elected by the association at its annual meeting, to serve for one year.

Sec. 3. One-fifth of the members shall constitute a quorum at any meeting of the members of the association.

Sec. 4. The Advisory Council shall consist of the Council of the Medical Society of the State of California and the Executive Committee of the League for the Conservation of Public Health acting with the officers and Executive Committee of this association.

Sec. 5. Vacancies among officers or in the membership of committees may be filled by the Executive Committee.

ARTICLE V Duties of Officers and Committees

Section 1. The duties of officers are those provided for herein, together with those ordinarily pertaining to the respective offices.

Sec. 2. The Executive Committee shall do all acts and things necessary to carry out the purposes of this Constitution, and shall be the permanent administrative body of this association. It shall fix the time and place of its meetings and of the annual and other meetings of the association. The Executive Committee shall meet at the call of the chairman or upon request of two of its members.

Sec. 3. All matters of policy affecting the educational and ethical activities of this association and its contact with the practice of medicine or with public health shall be referred to the Advisory Council, and its opinion and advice shall govern the position and action of this association; and upon all such matters the opinion and advice of the Advisory Council communicated to this association, without reference by it, shall in like manner govern the position and action of this association.

Sec. 4. The Advisory Council, representing in part the medical and public health bodies, under whose authority and direction this Constitution is formulated and this association is formed, shall furthermore finally determine whether any act or proceeding of this association, or any member thereof, is consistent with the foregoing preamble and the purposes of this Constitution, and what disciplinary steps or proceedings, whether of censure, suspension or expulsion, shall be imposed upon any member or members hereof for any reason.

ARTICLE VI Dues

Section 1. The dues for active and associate members shall be six dollars per annum, payable semi-annually or annually in advance. Honorary members shall not be subject to dues.

Sec. 2. Only members whose dues are paid shall be in good standing, and delinquency in the payment of dues for one year automatically forfeits membership.

ARTICLE VII Official Publications

The official and only publications of this association are the "Journal" of the Medical Society of the State of California and "Better Health" of the League for the Conservation of Public Health.

ARTICLE VIII Ethics

In matters not herein expressly defined, the code of ethics of the American Medical Association, insofar as the same is applicable, shall be the code of ethics of the members hereof.

ARTICLE IX Amendments

Section 1. This Constitution may be amended by a two-thirds vote of the active membership, which may be taken by mail ballot after the proposed amendment has been approved by the Advisory Council.

Association of Radiographers

The organization of the Radiographers of California has been completed by the Council, in conformity to the requirements of the resolution passed by the House of Delegates at the Coronado meeting. The officers of the Association and the executive council are as follows: President, Franklin W. McCormack; Vice-President, William M. Farrell; Secretary-Treasurer, Leonard Frank; Executive Council: Franklin W. McCormack, William M. Farrell, Leonard Frank, San Francisco; Sidney Rosenthal, Berkeley; Newton Wise, Sacramento; Joseph Pavliger, Oakland; Clarence H. Jones, Los Angeles.

PREAMBLE AND CONSTITUTION of the CALIFORNIA ASSOCIATION OF RADIOGRAPHERS

PREAMBLE

For all of the purposes of the California Association of Radiographers, including its preamble and constitution, Radiography is defined as a group of diagnostic and physical therapeutic procedures to be prescribed by doctors of medicine or dentistry and carried out under the physician's or dentist's direction by specially educated and trained technical assistants.

The diagnostic and therapeutic agencies and activities included for purposes of this organization under the general term of Radiography are:

Radiography of the human anatomy by means of the Roentgen ray or other photographic processes for diagnosis of the diseases or deformities of the human body;

Interpretation of the findings on the photographic plates, films or other impressions, said interpretation to be made only to, and at the request of, a legally registered physician, surgeon or dentist;

Radioscopy, or the examination of the deep structures of the body by means of the fluoroscope, this work to be done only upon the prescription of a legally registered physician or surgeon;

Localizing foreign substances in the body by means of the Roentgen ray and fluoroscope, this work to be done only upon the prescription of a legally registered physician, surgeon or dentist;

Treatment of human diseases by means of the Roentgen ray, this work to be done only upon the prescription and under the immediate supervision of a legally registered physician or surgeon;

Carrying out such other instructions in the use of the Roentgen ray or radium as are prescribed by physicians, surgeons or dentists.

Radiographers, therefore, in the meaning of this organization comprise the educated, trained technical assistants to the members of the medical and dental professions who subscribe to and are imbued with the same ethics, ideals and spirit of service that inspire and govern the physician and dentist, in the practice of the healing art.

As practical radiography is an integral part of modern medicine and modern dentistry, radiographers should form an effective unit of the organized medical and dental professions. It is, therefore, the permanent purpose of this organization to become intimately identified with national, state and local organizations of the medical and dental professions devoted to improving the practice and progress of scientific medicine for the promotion and protection of public health.

CONSTITUTION

ARTICLE I

Name

Section 1. The name of this Association shall be the California Association of Radiographers.

ARTICLE II

Purposes

Section 1. The purposes of the Association are as described in the preamble, which is hereby made a part of the constitution.

Additional purposes are, to encourage and assist in the proper education of students of radiography; to establish and maintain adequate standards in radiography; to hold meetings, conferences and otherwise promote increased efficiency and mutual benefits for members of this organization.

ARTICLE III.

Membership

Section 1. Members shall be active, associate and honorary.

Sec. 2. Men and women shall be accepted in membership upon the same basis.

Sec. 3. Any person who is actively engaged in radiography and who by education, personality, character and experience meets the minimum requirements effective at the time of the application, is eligible for active membership. The minimum educational requirement for charter members is that they shall have completed a four years' high school course or its equivalent. In addition, they shall have had six months of instruction in radiographic subjects in a school or laboratory acceptable to the Advisory Council, with one year's experience in the actual practice of radiography in an institution, hospital or laboratory accredited by the Advisory Council. Personal qualifications shall be determined by the Executive Committee.

Sec. 4. Any active member of the Medical Society of the State of California or the State Dental Association or the Southern California Dental Association who is actively interested in and has contributed to the knowledge and practices of radiography is eligible for associate membership.

Sec. 5. Physicians, dentists or radiographers who have rendered distinguished service to the cause of radiography may be elected honorary members by the Executive Committee.

ARTICLE IV

Officers and Committees

Section 1. The officers of this Association shall be a President, a Vice-President and a Secretary-Treasurer, who shall be elected at the annual meeting. The term of all officers shall be one year.

Sec. 2. There shall be an Executive Committee of seven members, consisting of the President, Vice-President and Secretary of the Association and four members elected by the Association at its annual meeting to serve for one year.

Sec. 3. One-third of the members shall constitute a quorum at any meeting of the members of this Association.

Sec. 4. The Advisory Council shall consist of the Council of the Medical Society of the State of California, the Executive Committee of the League for the Conservation of Public Health, acting with the officers and Executive Committee of this Association. The President, Secretary and one other member of the California State Dental Association and of the Southern California Dental Association shall be members of the Council when duly appointed by their organizations.

Sec. 5. Vacancies in office or in the membership of committees may be filled by the Executive Committee.

ARTICLE V

Duties of Officers and Committees

Section 1. The duties of officers are those provided for herein, together with those ordinarily pertaining to the respective offices.

Sec. 2. The Executive Committee shall do all acts and things necessary to carry out the purposes of this Constitution, and shall be the permanent

administrative body of this Association. It shall fix the time and place of its meetings and of the annual and other meetings of the Association. The Executive Committee shall meet at the call of the chairman or upon request of two of its members.

Sec. 3. All matters of policy affecting the educational and ethical activities of this Association and its contact with the practice of medicine or with public health or dentistry, shall be referred to the Advisory Council and its opinion and advice shall govern the position and action of this Association; and upon all such matters, the opinion and advice of the Advisory Council communicated to this Association, without reference by it, shall in like manner govern the position and action of this Association.

Sec. 4. The Advisory Council, representing in part the medical, dental and public health bodies, under whose authority and direction this Constitution is formulated and this Association formed, shall furthermore finally determine whether any act or proceeding of this Association, or any member thereof, is consistent with the foregoing preamble and the purposes of this Constitution, and what disciplinary steps or proceedings, either of censure, suspension or expulsion, shall be imposed upon any member or members hereof for any reason.

ARTICLE VI

Membership

Section 1. The name of an applicant for active membership, with such other data as is required hereunder and prescribed by the Executive Committee, shall be presented in writing to the Executive Committee by an active member. Election shall be by majority of the Executive Committee.

Sec. 2. Associate members shall be nominated and elected as are active members, except that honorary or associate members may submit nominations to the Executive Committee.

Sec. 3. All nominations for honorary membership shall be made in writing at least three months before the annual meeting. Honorary members may be elected only at the annual meeting by the active members of the Association and not more than two may be elected in any one year.

ARTICLE VII

Dues

Section 1. The dues for active and associate members shall be twelve dollars per annum, payable semi-annually or annually in advance. Honorary members shall not be subject to dues.

Sec. 2. Only members whose dues are paid shall be in good standing, and delinquency in the payment of dues for one year automatically forfeits membership.

ARTICLE VIII

Official Publications

The official and only publications of this Association are the "Journal" of the Medical Society of the State of California and "Better Health" of the League for the Conservation of Public Health, and the official publications of the California State Dental Association.

ARTICLE IX

Ethics

In matters not herein expressly defined, the code of ethics of the American Medical Association, insofar as the same is applicable, shall be the code of ethics of the members hereof.

ARTICLE X

Amendments

Section 1. This Constitution may be amended by a two-thirds vote of the active membership, which may be taken by mail ballot, after the proposed amendment has been approved by the Advisory Council.

Book Reviews

The Allen (Starvation) Treatment of Diabetes. By Lewis W. Hill and Rena S. Eckman, 4th ed. 140 pp. Boston: W. M. Leonard. 1921.

This compact manual tells practically all that is necessary to know about the carrying out of the author's treatment. It contains no theory, but gives numerous menus, with calorie calculations and receipts, for preparing diabetic food. It is a useful and thoroughly practical book. L. E.

Roentgen Interpretation. By George W. Holmes and Howard E. Ruggles. 211 pp. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Price, \$2.75.

Considering the size of this little book on roentgen interpretation, the subject is well covered, or, perhaps, we had better say that this hand-book has touched upon nearly every subject in the field of roentgen interpretation. Perhaps the best criticism we can make is to say that we believe it can accomplish that which the authors wished for it in their preface, for it will surely "prove of practical aid to those in search of a working knowledge of roentgen interpretation." The book is divided into nine chapters, each dealing with a separate subject as chest examination, gastro-enterology, et cetera.

M. D.

Principles of Human Physiology. By Ernest H. Starling. 1315 pp. 3rd ed. Philadelphia: Lea and Febiger. 1920.

The third edition of this splendid work needs no great introduction. In spite of all the handicaps thrown in their way by the anti-vivisectionists, English physiologists continue to lead the world, not only in originality of thought but in technical ability and especially in clearness of exposition. Professor Starling stands in the front rank of his profession, and his book is an exceedingly well written and valuable one. The chapter on "Sense Organs" has been revised and largely rewritten by Mr. Hartridge.

W. C. A.

Keen's Surgery, Volumes VII and VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 960 pages, with 657 illustrations, 12 of them in colors. Philadelphia and London: W. B. Saunders Company, 1921. Price: Volumes VII and VIII, and Desk Index Volume, cloth, \$25 net per set. Sold by subscription.

These two new volumes supplement and rejuvenate the five original volumes and the other supplementary volume of "good old Keen," who has come to be the American surgeon's standby and friend in need.

The seventh volume contains mainly chapters that are the result of work done during the war. Lovett's, Sir Robert Jones', and Hey-Groves' chapters on orthopedic surgery, Matas' on vascular surgery, Blake's on fractures, are mines of information that will be of great value to industrial surgeons. They are gathered from an experience with the inexhaustible material of six years which we hope may never be duplicated.

The eighth volume contains forty chapters, many of them quite short, on endocrine glands, on the specialties, on abdominal and thoracic surgery. The chapters on endocrine glands are from the Mayo Clinic. They are disappointing; they deal too much in generalities and theory to be practically useful; their theories are not well enough founded nor explicit enough to throw light on our ignorance of endocrine physiology. Hugh Young's

chapter on the prostate brings much that is new and valuable. Heuer's long chapter on thoracic surgery stands out as an unusually complete and careful piece of work, containing much that is original.

Keen's surgery has made itself indispensable. The two new volumes hold their own with the rest of this admirable work.

L. E.

Books Received

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers, A. B., M. D. 226 pp. 230 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, \$2.25.

Practice of Medicine. A manual for students and practitioners. By Hughes Dayton, M. D. Fourth revised edition. 328 pp. Philadelphia and New York: Lea & Febiger. 1921. Price, \$2.25.

Diseases of Children. Designed for the use of students and practitioners of medicine. By Herman B. Sheffield, M. D. Formerly Instructor in Diseases of Children, New York Post-Graduate Medical School and Hospital, and Medical Director, Beth David Hospital; Consulting Physician to the Jewish Home for Convalescents and the East Side Clinic for Children. 798 pp. 238 illustrations, 9 color plates. St. Louis: C. V. Mosby Company. 1921. Price, \$9.00.

General Pathology. An introduction to the study of medicine, being a discussion of the development and nature of processes of diseases. By Horst Oertel, Strathcona Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and of the Royal Victoria Hospital, Montreal, Canada. 357 pp. New York: Paul Hoeber. 1921. Price, \$5.00.

Organic Dependence and Disease: Their Origin and Significance. By John M. Clarke, D. Sc., Colgate, Chicago, Princeton LL. D., Amherst, Johns Hopkins, Member of the National Academy of Sciences, New York State Paleontologist. 113 pp. Illustrated. New Haven: Yale University Press. 1921.

Maternitas. A book concerning the care of the prospective mother and her child. By Charles E. Paddock, M. D., Professor of Obstetrics, Chicago Post Graduate Medical School; Assistant Clinical Professor of Obstetrics, Rush Medical College; Attending Obstetrician, St. Luke's Hospital. 210 pp. Illustrated. Chicago: Cloyd J. Head & Co. 1920. Price, \$1.75.

Practical Dietetics. With reference to diet in health and disease. By Alida Frances Pattee, Graduate Department of Household Arts, State Normal School, Framingham, Mass.; Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City, etc. Thirteenth edition. Revised. 543 pp. Mount Vernon: A. F. Pattee, Publisher. 1920.

Story of the American Red Cross in Italy. By Charles M. Bakewell. 253 pp. New York: The Macmillan Company. 1920.

Principles of Hygiene. A practical manual for students, physicians and health officers. By D. H. Bergey, A. M., M. D., Ph. D., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh edition, thoroughly revised. 556 pp. Philadelphia and London: W. B. Saunders Company. 1921.

State Society

JOINT MEETING OF STATE AND COUNTY SOCIETIES' OFFICERS

The next joint meeting of the Council of the State Society and the officers of the various constituent societies will be held in San Francisco, Saturday, September 24, 1921. All officers of county societies, who can possible arrange to do so, should attend the meeting. Where attendance by the officers is impossible, a delegate should be appointed with power to act for the Society.

Hereafter these meetings will be held semi-annually. Arrangements for two such meetings during the annual session in Yosemite next May will be provided as part of the program. The next mid-year meeting will be in Los Angeles, Saturday, September 9, 1922. This date is selected so that members may also attend the Hospital Conference which will be held the same week in Los Angeles. These advance dates are published in order that all persons may have full opportunity to secure any desired information or make any suggestions regarding these meetings.

It is very important that delegates of county societies attend the meeting in San Francisco on the 24th of this month.

SECTION OF OBSTETRICS AND GYNECOLOGY FOR THE COMING STATE MEETING

In the past we have had great difficulty in securing a proper variety of contributions for our Section Meetings, because the synopses as well as the actual articles were sent in at the last moment and could not be submitted to a program committee for selection.

We, therefore, request of those who wish to present original papers at the next State meeting to signify their intention at once and to let us have a clear synopsis of the contents not later than December 1. This will allow us ample time to make proper selections.

We call your attention again to the necessity of contributing a small sum of \$5, as previously requested, in order to secure the services of a stenographer for the coming meeting.

L. A. EMGE, Secretary.
Stanford University Hospital.

THE 1922 HOSPITAL CONFERENCE

The Executive Committee of the League for the Conservation of Public Health announce that the next annual Hospital Conference will be held in Los Angeles on Wednesday, Thursday and Friday, the 6th, 7th and 8th of September, 1922. Hospitals, organizations and persons interested in the arrangements, program or any other matter connected with this important conference should write to Mr. Celestine J. Sullivan, Executive Secretary of the League, Butler Building, San Francisco.

County Societies

Placer County—(Reported by Robert A. Peers, Secretary)—At the regular meeting of the Placer County Medical Society, held at Auburn, Saturday evening, August 13, 1921, the following program was presented: "Modern Conceptions of Treatment of Circulatory Disorders," by Dr. Eugene Sterling Kilgore, of San Francisco; "Diagnosis of Breast Tumors by Exploration," by Dr. Alson Raphael Kilgore, of San Francisco, and "Industrial Fatigue," by Dr. E. H. Coleman, of Hobart Mills.

Dr. Alson Kilgore also gave a short talk upon the educational program of the American Society for the Control of Cancer, and urged the co-operation of the members of the society in promoting the society's educational work during Cancer Week. The following resolution was then adopted:

Whereas, The American Society for the Control of Cancer has named the week of October 30 to November 5 as Cancer Week for the education of the public in the early signs of cancer to the end that the mortality from this disease may be reduced; and,

Whereas, Dr. Carl P. Jones, of Grass Valley, has been appointed as County Chairman for Placer County Medical Society; therefore be it

Santa Barbara County—(Reported by H. L. Schurmeier, Secretary)—The Society met at the Cottage Hospital, Santa Barbara, July 11. There were fourteen members and three guests present and thirty-seven members absent. A report was made of three patients suffering from hyperemesis gravidarum successfully treated with farina gruel, ovarian extract, bromides diet, etc.

Dr. H. F. Profant was elected a member of the Society.

The St. Francis Hospital is to commence construction of a new 100-bed hospital at once. There are to be four floors, two solaria on each floor, twenty-four private baths. The first floor will be for medicine, second floor for surgery, third for obstetrical cases and fourth devoted exclusively to operating rooms, delivery rooms, orthopedic work-rooms and X-ray laboratories. There will be a roof garden on top of the hospital.

MAKING NATIONAL PARKS SAFE

A concerted effort is being made by the U. S. Public Health Service and the National Park Service, to make the National Parks of the United States safe and sanitary for the vast numbers of Americans who have recently taken to touring them. Before the war, when tourists were fewer and most of them traveled on stage lines and stayed at park hotels, the sanitary problem was simple. Since the war, however, the great majority travel in automobiles and camp out, enormously complicating all health matters.

Since early in January, the U. S. Public Health Service, at the request of and in co-operation with the National Park Service, has been preparing for the work; and on May 15, it sent its first sanitary engineers into Yellowstone, Mount Rainier, Yosemite, and Grand Canyon parks. Other engineers, or engineers who have finished work on their earlier assignments, will go to other parks. Only in the largest and most popular parks, such as the Yellowstone, will it be necessary for a sanitarian to remain all summer.

The work consists in examination and protection of water supplies, disposal of garbage and sewage, inspection of milk and food and the way they are handled; providing for camp policing and sanitation; and prevention of malaria. Malaria-carrying mosquitoes have been found in Yosemite park; and especial efforts will be made to eradicate them there and to prevent them from "acquiring a residence" in other parks.

WHY MARYLAND QUIT PHYSICIANS' LINES

In announcing its retirement from physicians' liability insurance as of February 1, the Maryland Casualty states that its premium income from this line in 1919 was only \$18,505 and amounted to only \$322,039 for the ten-year period ending with 1919. Losses and claim expense for the ten years made for a ratio of 71.8 per cent. In 1919 losses and claim expense took 90 per cent of premiums. In only two years of the ten was the company unable to show an underwriting profit on this class of business. Underwriting loss in 1919 was 20.5 per cent and for the ten years 10.6 per cent.

MEDICAL PRACTICE ACT OF ILLINOIS UNCONSTITUTIONAL

The Supreme Court of Illinois, under date of June 22 of this year, declared the Medical Practice Act of 1917 unconstitutional.

This means, in fact, that drugless practitioners will not be compelled to comply with any requirements relative to preliminary education. All the requirement that is left is to pass the examination that is required by the Department of Registration and Education.

A NEW EXAMINING AND TREATMENT TABLE

Recently a very interesting article by Emily Dunning Barringer, M. D., F. A. C. S., of New York City, on "Ward Treatment of Gonorrhoea in the Female," was printed in the New York State Journal of Medicine. The special treatment table referred to was designed by Dr. E. E. Cable, of Portland, Oregon, and is described by Dr. Barringer:

The outstanding feature of the table is a small square drainage box in the lower portion of the table, this drainage box connecting with the waste pipe. Above the table, with hot and cold water connections, is a twenty-gallon tank, with an outlet tube running down to the upper edge of the drainage box. The tank is fitted up with a thermometer and gauge, so that the amount and temperature of the water can easily be read. The patient lies on the table in the lithotomy position with her buttocks protruding over the drainage box. A sterile glass douche tip is attached to the tube at the edge of the drainage box, and the patient inserts the douche tip herself, and holds it in place for about three minutes, during which time she gets about one gallon of irrigation. After this irrigation the speculum is introduced by the physician, and the cervix and vault of the vagina swabbed out with 25 per cent argyrol, and any other special treatment given.

"We have in use three such tables and two supply tanks, each table being connected with both tanks. These three tables can be used one tank at a time, while the other tank is being filled. The practical advantages are cleanliness, control of temperature and pressure, and an enormous saving of time for doctors and nurses. In two hours' time fifty to sixty such douches and treatments can be given. Wherever pus has been found in the urethra or Skene's glands, instillation of argyrol is made into the urethra."

GENERAL HOSPITALS AND TUBERCULOSIS PATIENTS

The opening of wards in general hospitals for tuberculous patients, as recommended by the American Medical Association at its recent annual meeting in Boston, will, it is believed by the United States Public Health Service, be of enormous benefit not only to most of the two million known victims of the disease in the United States, but also to thousands of others in whom the disease is incipient and easily suppressible, if promptly treated. Tuberculosis in this stage is difficult and often impossible of positive diagnosis, even by an expert; and many persons, even when told by their family doctor that their case is "suspicious" and that they should take precautionary treatment, fear the stigma of an avowed tuberculosis hospital and put off action until recovery has become long and difficult. In a general hospital the diagnosis will not be made public and the family will not be embarrassed, but at the same time all necessary precautions can be taken to avoid danger of infection to others.

In support of the new policy it is argued that in many small cities two hospitals, one general and one tuberculous, can be run only at a loss, but if combined would pay operating expenses, especially as the combined hospital would draw many secret tuberculous cases. Many general hospitals could easily enlarge their facilities by fitting upwards, roofs, porches, and unused open-air spaces and

thus provide greatly needed space for tuberculous patients, both former army men and civilians.

The routine treatment of tuberculous patients in all general hospitals, instead of as at present in only about one-eighth of those in the country, should enable people in moderate circumstances to obtain preliminary treatment in their home towns instead of being forced to go without or to go to resorts. Such preliminary treatment would habituate the patient to the regimen essential to his cure and to the protection of others, and would enable him to go back to his home and get well under home treatment, as he probably would not have done without such training.

New Members

Lovas, A., Hanford; Goodrich, W. W., San Joaquin; Robinson, Joseph, Anaheim; Blackmun, Ernest L., Stockton; George, W. S., Antioch; von Werthern, H. L., San Francisco; Southard, C. O., San Francisco; Craig, S. A., Ontario; Shaw, H. N., Los Angeles; Hancock, J. M., Los Angeles; Adams, Charles B., Los Angeles; Steen, C. E., Gardena; Ruediger, Gustav, Los Angeles; Fisher, Carl, Los Angeles; Chaffee, Burns, Long Beach; Shirey, Chas. W., Lankershim; Burke, C. A., Los Angeles; Walters, William A., Los Angeles; Trainor, M. E., Los Angeles; Shine, Francis E., Los Angeles; Baxter, Donald E., Los Angeles; Montgomery, R. R., Long Beach; Holleran, James J., Los Angeles; Craig, C. A., Lakeport; Craig, M. A., Lakeport; Wilson, Frank M., Los Angeles; McLaughlin, Tilman H., Los Angeles; Baetz, Walter G., Huntington Park; Robinson, John W., Los Angeles; Prendergast, John W., Los Angeles; Viole, Pierre, Los Angeles; Shipman, Sidney J., Colfax; Nicholls, Robert J., Auburn; Wheeler, J. S., Lincoln; Reynolds, Lloyd R., San Francisco; Bland, George H., Fresno; Yoakam, F. A., Moorpark; Gibson, Arthur C., San Francisco; Profant, H. J., Santa Barbara; O'Donnell, F. J., Stockton.

Deaths

Austin, S. A. Died in Los Angeles, June 17, 1921. Was a graduate of Rush Medical College, 1877. Licensed in California, 1889.

Bering, Robert Eugene. Died in Los Angeles, August 7, 1921. Was a graduate of Tulane University, La., 1895. Licensed in California, 1901, and a member of the State Society.

Clark, E. M. Died in Oakland, July 16, 1921. Was a graduate from University Vermont, 1908. Licensed in California, 1908. Age 37.

Gordon, Samuel B. Died in Monterey, California, June 13, 1921. Was a graduate of University City of New York, 1889. Licensed in California, 1890.

Kintzi, Erwin J. Died in Los Angeles, July 17, 1921. Was a graduate of University of Southern California, 1919. Licensed in California, 1920.

MacDonald, J. Munroe. Died July 23, 1921. Was a graduate of Medical Department, University of California, 1891. Licensed in California, 1892. Was a member of the Medical Society, State of California.

Morrison, W. H. Died in Los Angeles, California. Was a graduate of Kansas City Medical College, Mo., 1880. Licensed in California, 1887. Also a member of the Medical Society, State of California.

Risdon, Herbert Thomas. Died in Berkeley, California, June 21, 1921. Was a graduate of University of Vermont, 1879. Licensed in California, 1882.